THIRD SERIES VOL 67 NUMBER 5 MARCH 1960

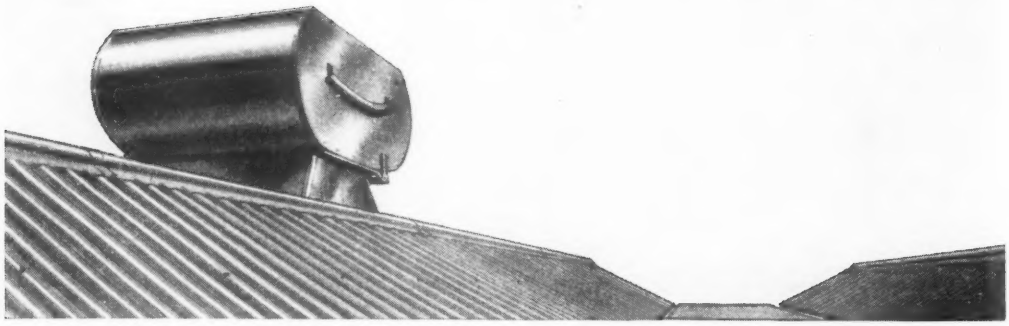
Architecture Library

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

MAR 25 1960

66 PORTLAND PLACE LONDON W1 · THREE SHILLINGS AND SIXPENCE

The Alvorada Palace, Brasilia. Architect: Oscar Niemeyer



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★ New techniques, materials, products: the endless way they creep up has blighted many a young architect's life. Yet there's often something in this flood of novelty of use to the forward-looking practitioner, if only he can spot it. Established architects use *The Builder* to help; its weekly 'technical review' dispassionately summarises what is new and worthwhile, and supplements advertisers' announcements, in themselves an invaluable source of information. Beyond all this the newspaper with its 'new look' carries a constant flow of articles by experts—W. A. Allen, ARIBA. among them—in which the loose threads of science are woven into a practical fabric for your use.

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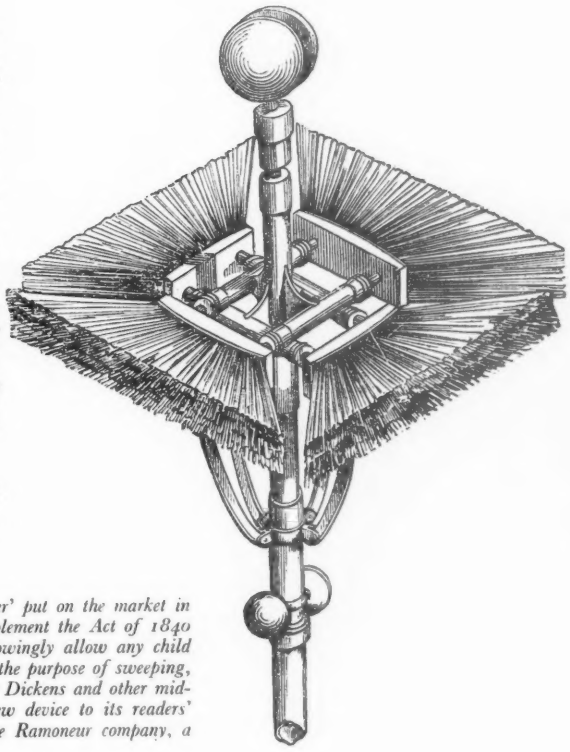

The curious object shown is the 'patent Ramoneur chimney sweeper' put on the market in 1842 by 'an Association of Gentlemen' voluntarily pledged to implement the Act of 1840 which prescribed monetary penalties for those who 'compel or knowingly allow any child or young person under the age of 21 to ascend or descend a flue for the purpose of sweeping, cleaning or coring the same'. This Act was a triumph for Charles Dickens and other mid-century humanists, and 'The Builder' was quick to bring the new device to its readers' attention. That it backed a winner is shown by the fact that the Ramoneur company, a successor to the original Association, is in active operation to-day.

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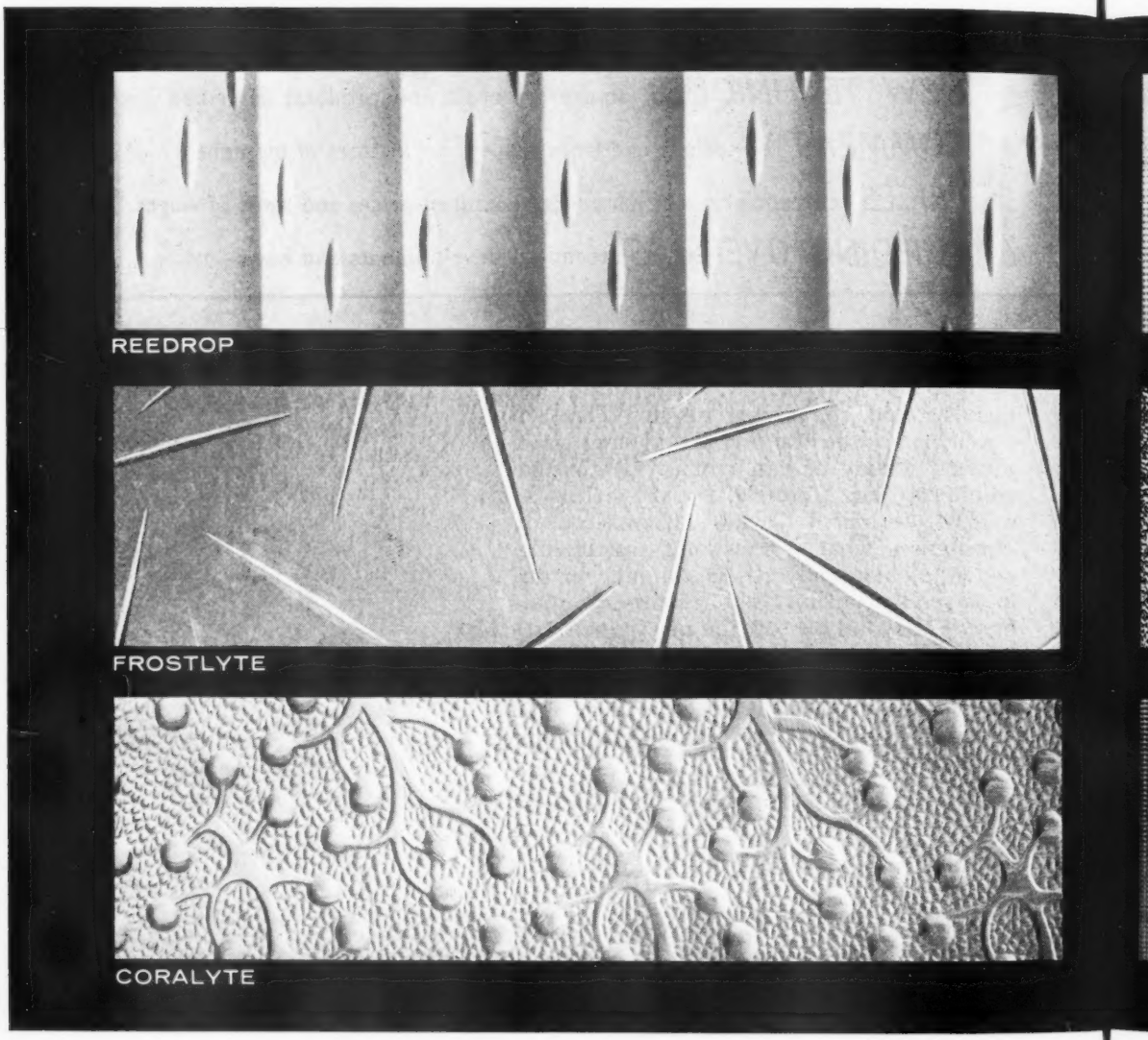
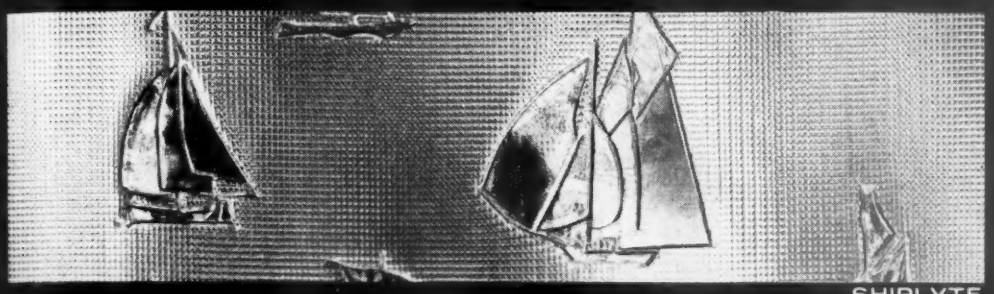


As well as adding new decorative opportunities to the extensive range of Pilkingtons' Cathedral, Figured Rolled, Reeded and Fluted Glasses, these new patterns, with their varying degrees of obscuration have a wide range of functional applications. For full details write to Pilkingtons' Technical Sales and Service Department.

ofigured rolled glass



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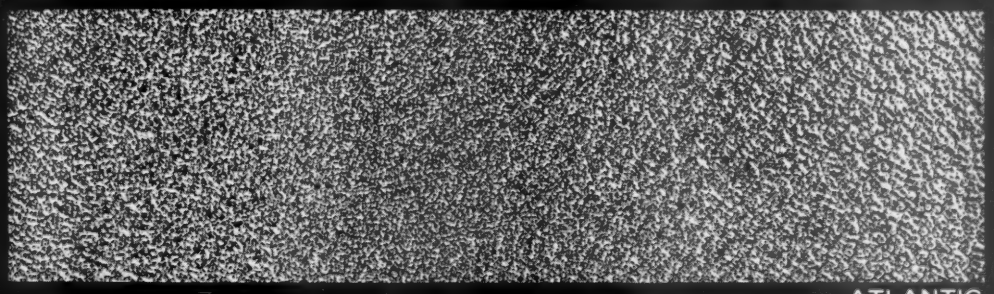
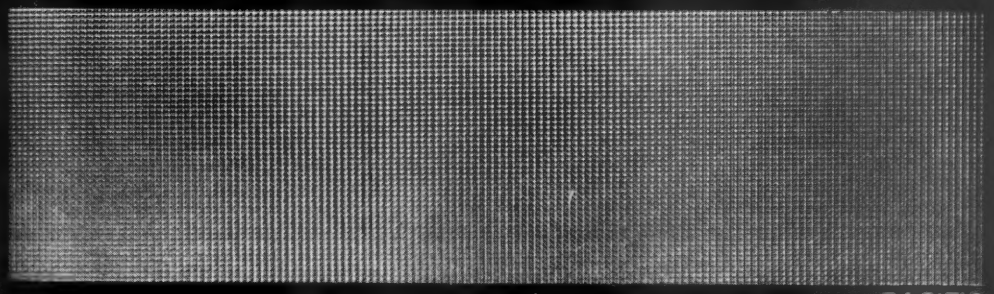


ATLANTIC



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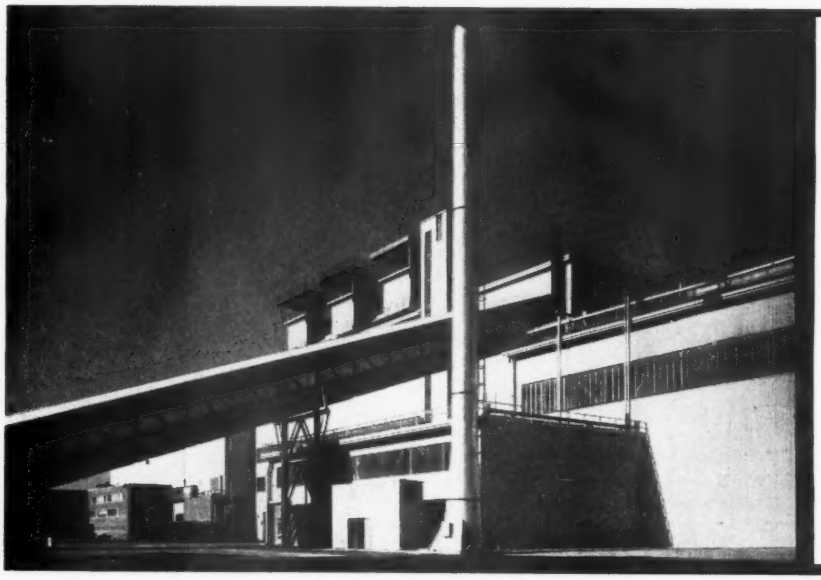
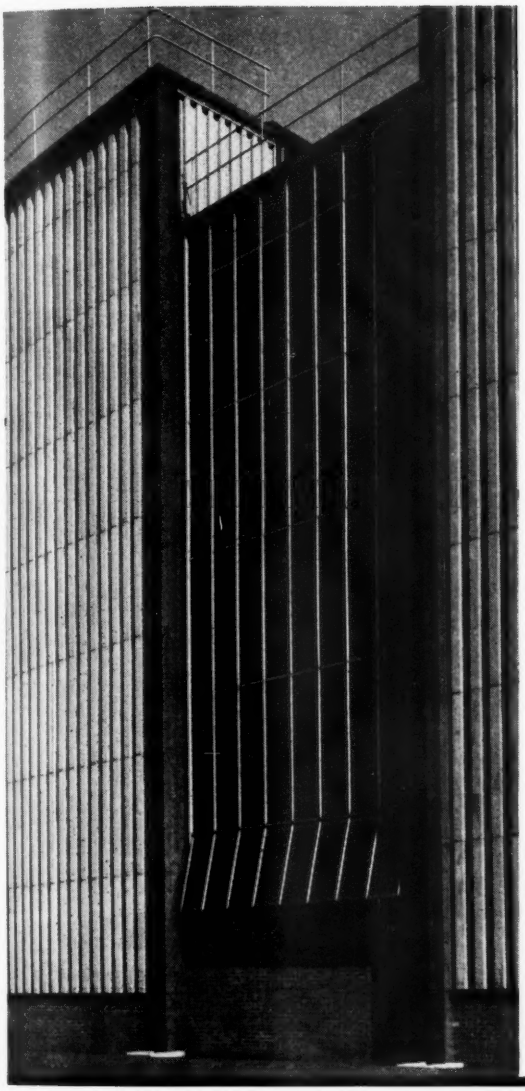
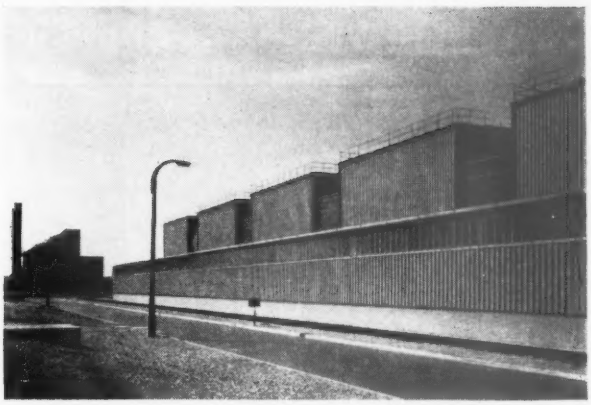


New buildings for the Steel and Tinplate Divisions of The Steel Company of Wales Limited—Abbey Works at Port Talbot and Velindre Works at Swansea.
Architects:
Sir Percy Thomas & Son, Cardiff, Swansea and Shrewsbury.
Consulting Engineers:
W. S. Atkins & Partners.

The Steel Company of Wales works at Port Talbot and Swansea are among the best known post-war industrial developments. What is perhaps less well known is the part aluminium played in their construction. Williams & Williams ALUMINEX PATENT GLAZING was chosen for its speed of erection, favourable balance between prime and maintenance costs, and the ease with which broken panes of glass can be replaced at any time.

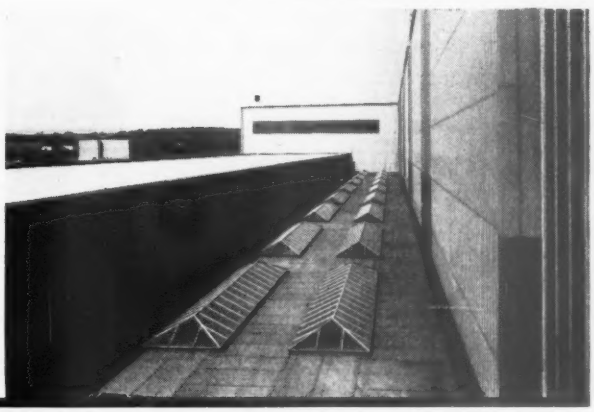


Close-up of Aluminex Sidewall Glazing on the west side of Velindre Works.



Continuous Aluminex Sidewall Glazing on the east side of the shipping bay, Velindre Works. The roofs of both Velindre and Abbey Works are "high-low" constructed—the "transverse clerestories" are fitted with Aluminex continuous opening lights for extra daylight and ventilation.

Among the Aluminex decklights in the City of Steel are these on the general stores building where they provide overhead daylight at the lower levels, supplementing the general lighting of the main building by Aluminex sidewall glazing.



So at both Abbey and Velindre Works, the ribbed steel wall sheeting is married to great expanses of patent glazing—ALUMINEX PATENT GLAZING for weather tightness and resistance to corrosion. Just one more example of the way Williams & Williams products are contributing their efficiency to better buildings everywhere.

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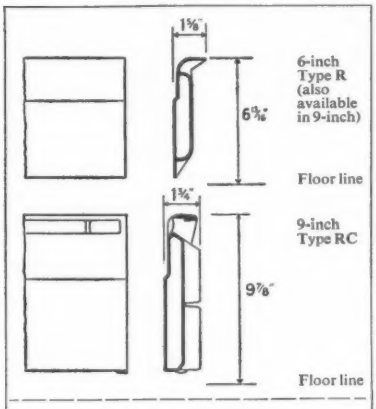
When windows must be wide and deep

THE need to introduce—whether for practical or for aesthetic reasons—windows that reach generously from floor to ceiling and wall to wall, might appear to present a problem: the problem of installing an efficient heating system economically without taking up valuable space or marring an otherwise uncluttered design.

There is one system that is designed to answer problems of this kind. It is a system of skirting heating developed by Crane Ltd. Crane Skirting Heating is so unobtrusive and its application so flexible that a great deal of freedom of arrangement is attained.



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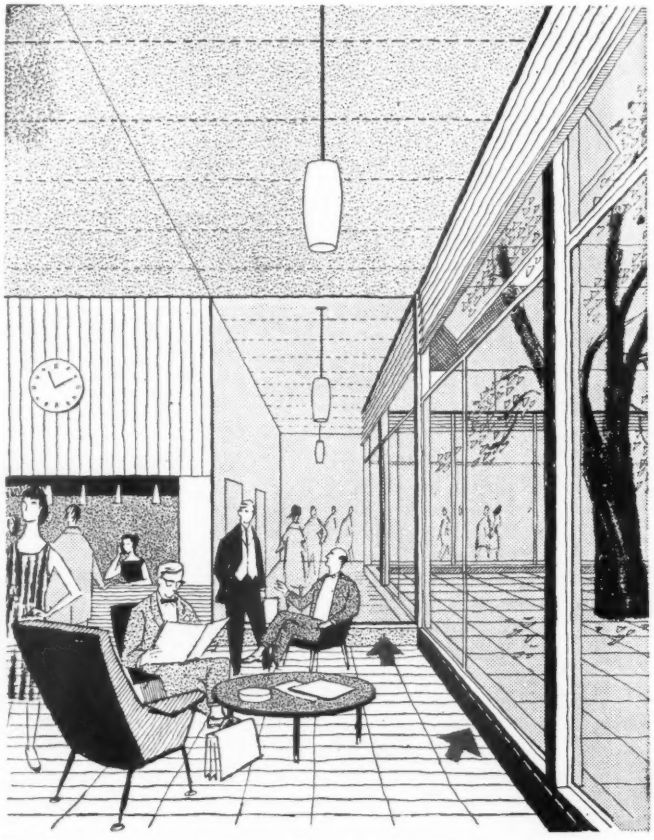


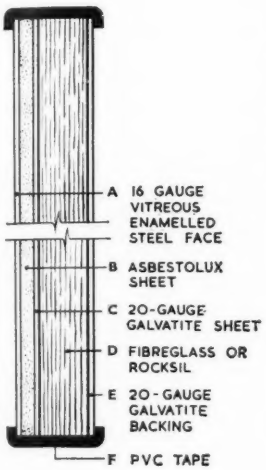
This heating system takes the form of panels which are used in place of the normal skirting. They avoid local 'hot spots' and distribute the warmth evenly where it is needed, without taking valuable floor or wall space. There are two types. Type R, which is purely radiant and made in panels 6-inches and 9-inches high; and Type RC (radiant-convector) in the 9-inch size only (used in the example illustrated and indicated by arrows). All panels are in 2-ft. and 1-ft. lengths and are made of cast iron, which gives them great resistance to accidental damage. The operations of calculating heat requirements and designing the pipework are in principle no different from those for conventional radiator heating systems.

In all cases where the architect needs greater freedom of expression than conventional heating systems allow him, and at the same time has to pay due consideration to costs, the answer is, undoubtedly,

CRANE skirting heating

Curran SEAPORCLAD INFILL PANEL TYPES 1 AND 2

These vitreous enamelled steel panels are two of a wide range manufactured by Edward Curran Engineering Ltd. Curran vitreous enamel is a true glass surface fired at 860°C on steel; it is permanent, will not fade and is highly resistant to chemical attack. Curran Seaporclad provides permanent colour and excellent insulation. It is light, versatile, quickly assembled and requires the minimum maintenance. Supplied in most colours of the British Standard 101 Range; full gloss, matt or semi-matt; stippled, marbled, etc. Panels are available up to 8′×4′—recommended maximum size 6′×4′. Curran Seaporclad complies with the standards and specifications laid down by the Vitreous Enamel Development Council.

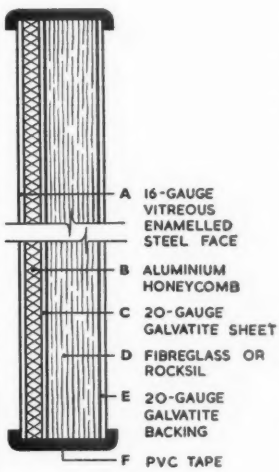

A 16 GAUGE VITREOUS ENAMELLED STEEL FACE
B ASBESTOLUX SHEET
C 20-GAUGE GALVATITE SHEET
D FIBREGLASS OR ROCKSIL
E 20-GAUGE GALVATITE BACKING
F PVC TAPE

TYPE 1

The face is bonded with neoprene to ¼″, ⅜″ or ½″ asbestolux sheet, bonded in turn to a galvatite sheet which forms a vapour barrier. The insulating material—which can be varied in thickness to meet the required 'U' value—is contained in a galvatite backing tray. Panel edges are sealed with PVC tape.

'U' Value	Weight per sq. ft.	Panel Thickness	Core Thickness
.174	7 lb. 2 oz.	1⅜″	1″
.128	7 lb. 6 oz.	1⅞″	1½″
.100	7 lb. 10 oz.	2⅜″	2″

Calculated on the basis of ¼″ asbestolux sheet


A 16-GAUGE VITREOUS ENAMELLED STEEL FACE
B ALUMINIUM HONEYCOMB
C 20-GAUGE GALVATITE SHEET
D FIBREGLASS OR ROCKSIL
E 20-GAUGE GALVATITE BACKING
F PVC TAPE

TYPE 2

The face is bonded with neoprene to ¼″, ⅜″ or ½″ aluminium honeycomb core, bonded in turn to a galvatite sheet. Insulating material—varied in thickness to meet the required 'U' value—is contained in a galvatite backing tray. Panel edges sealed with PVC tape.

'U' Value	Weight per sq. ft.	Panel Thickness	Core Thickness
.156	6 lb. 4½ oz.	1⅜″	1″
.118	6 lb. 8½ oz.	1⅞″	1½″
.094	6 lb. 12½ oz.	2⅜″	2″

Calculated on the basis of ¼″ aluminium honeycomb

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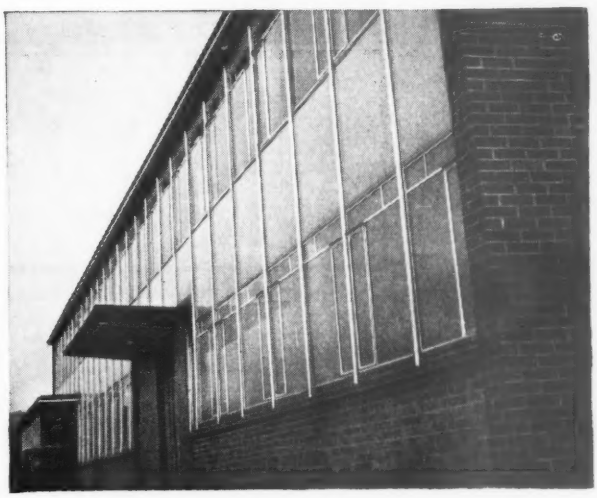
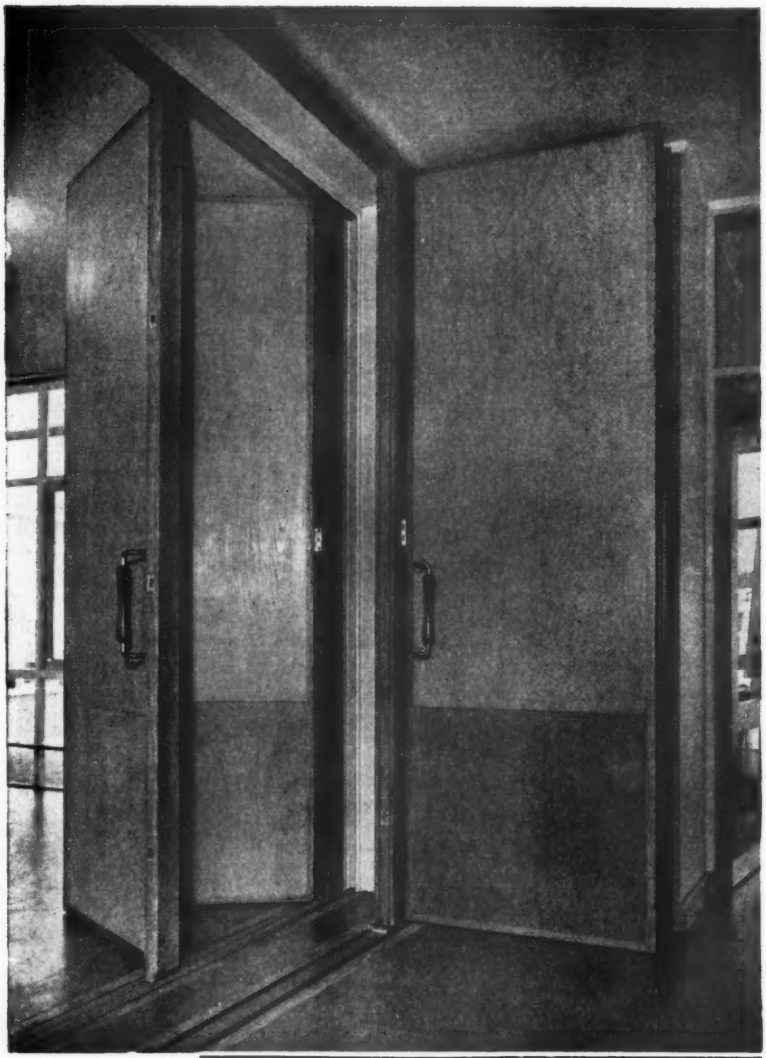
Contractors: Turriff Construction Company

All panels used are Curran Seaporclad Type 1. Overall thickness in this case is 1⅜″ as the asbestolux sheet is ½″ thick. Some panels used on this contract were up to 52″ x 59″. Colour BS7/082 (semi-matt finish).

Seaporclad Infill Panels are also being manufactured and used in Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, France, Germany, Holland, Italy, Japan, Luxembourg, New Zealand, Norway, South Africa, Spain, Sweden, Switzerland, Turkey, United States of America.
Full technical information is available from the sole manufacturers in the British Isles: Edward Curran Engineering Ltd, Architectural Division, Cardiff. Telephone: Cardiff 33644.

A PRODUCT OF THE CURRAN ORGANIZATION





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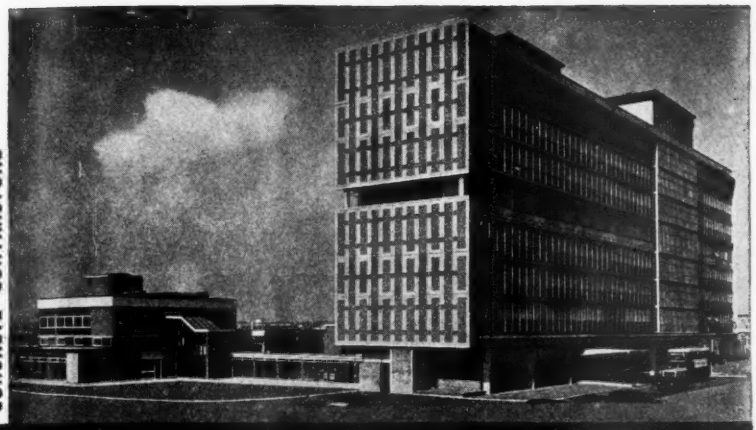
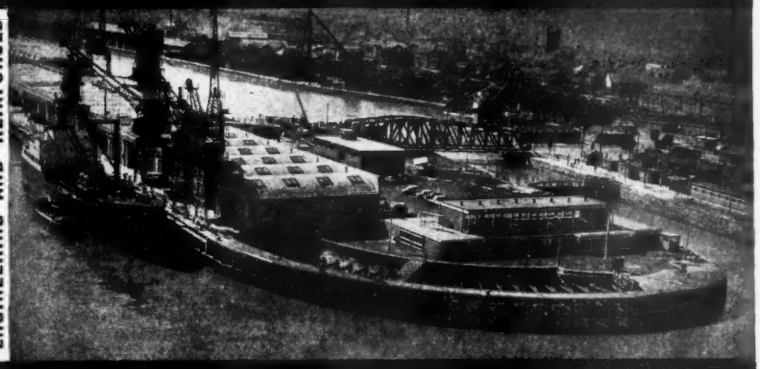


on land



by the sea

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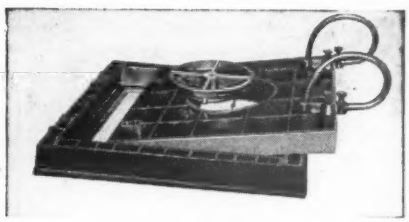

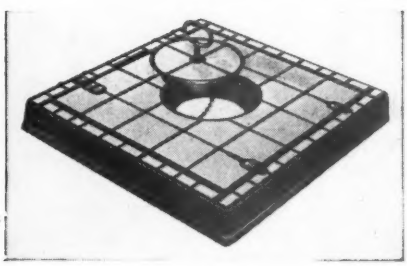

Every Council throughout the country has had a copy of this new folder on the Elkington Gatic Cover and Frame for Garages. It has been very favourably received. This cover has been developed for specific use over filling and dipping points to underground petroleum storage tanks. The seatings of the cover, both horizontal and vertical, are in continuous metal to metal contact with their respective frame seatings. A smear of grease on these seatings provides a watertight seal when properly set and maintained. As this design of the Elkington Gatic cover is watertight it removes the necessity of setting the cover proud of the surrounding surface, enabling it to be set flush with the carriageway.

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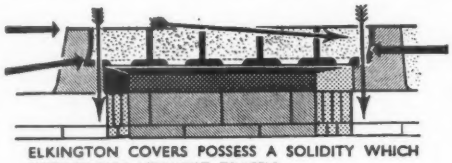

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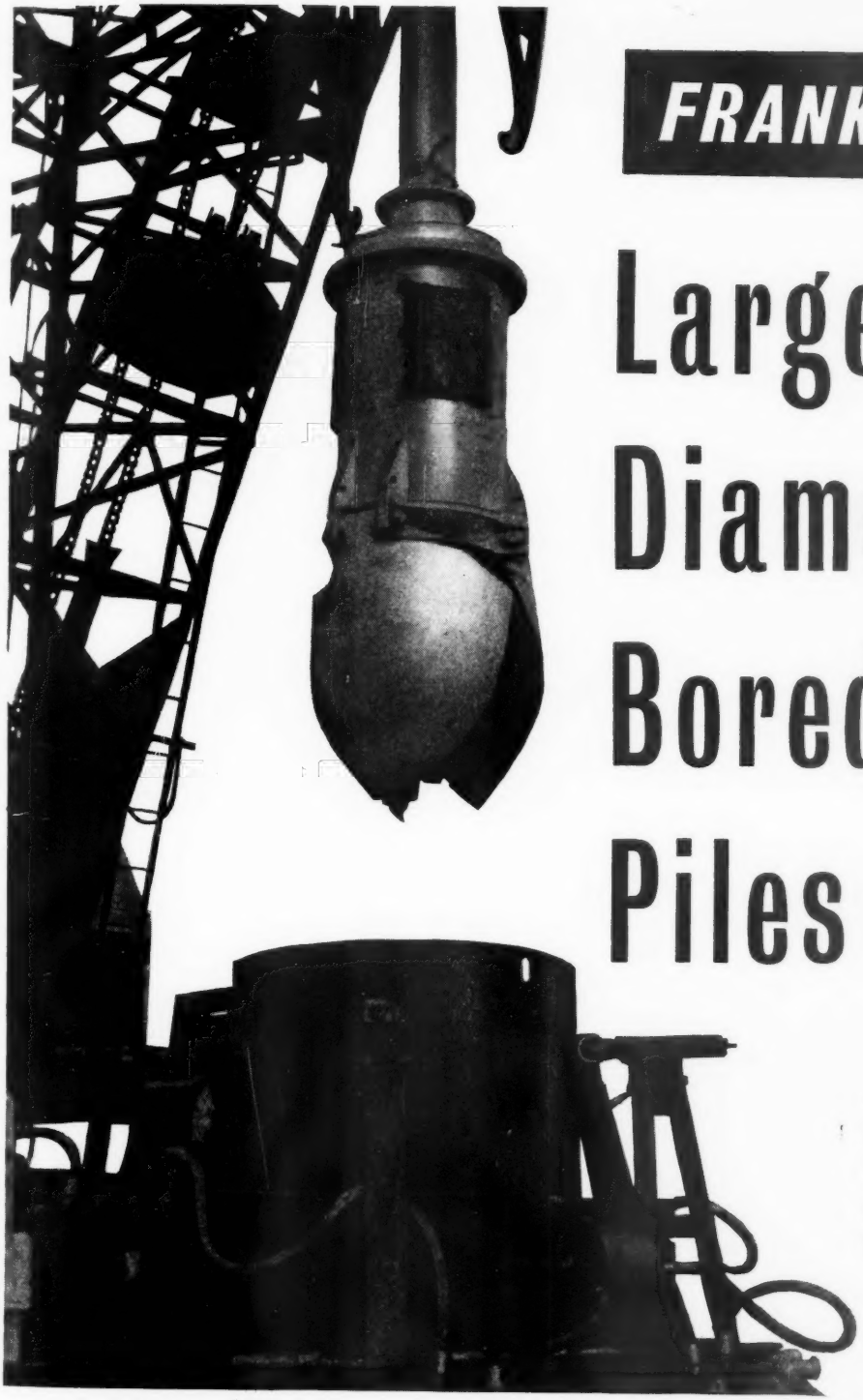

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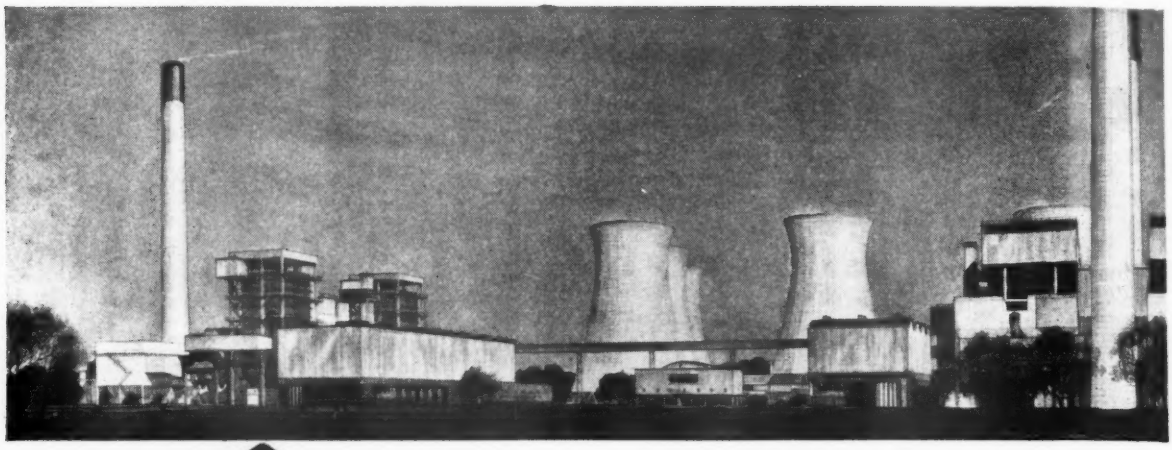

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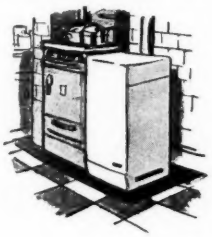

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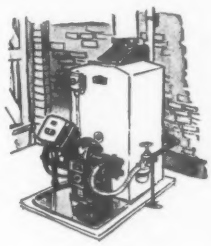

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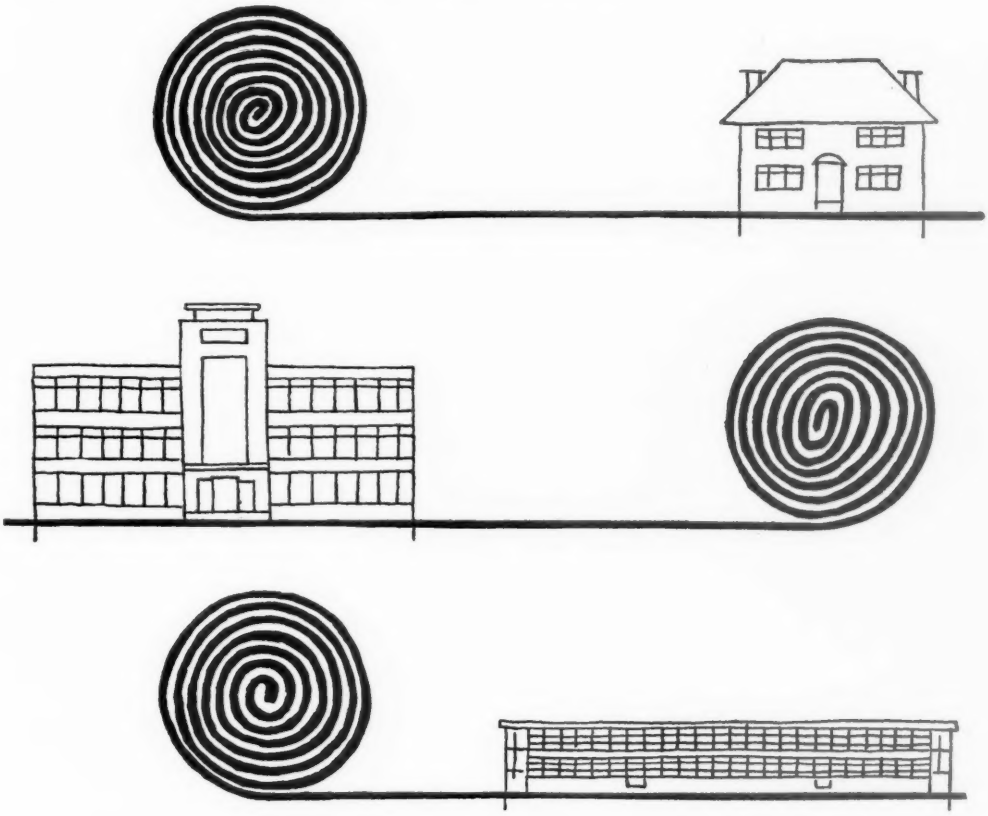

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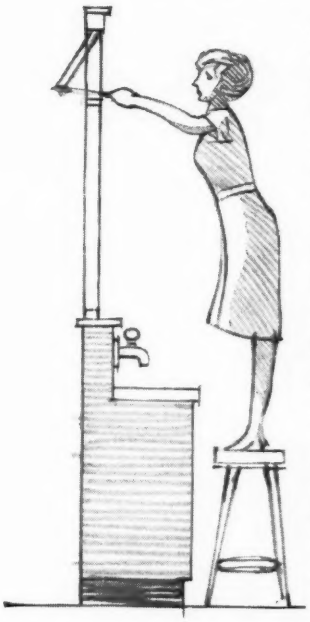

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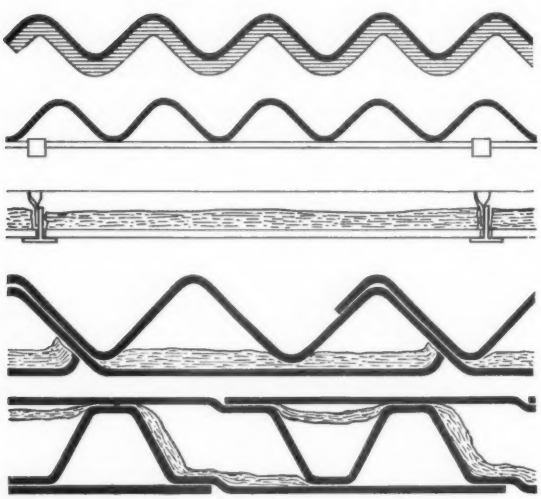

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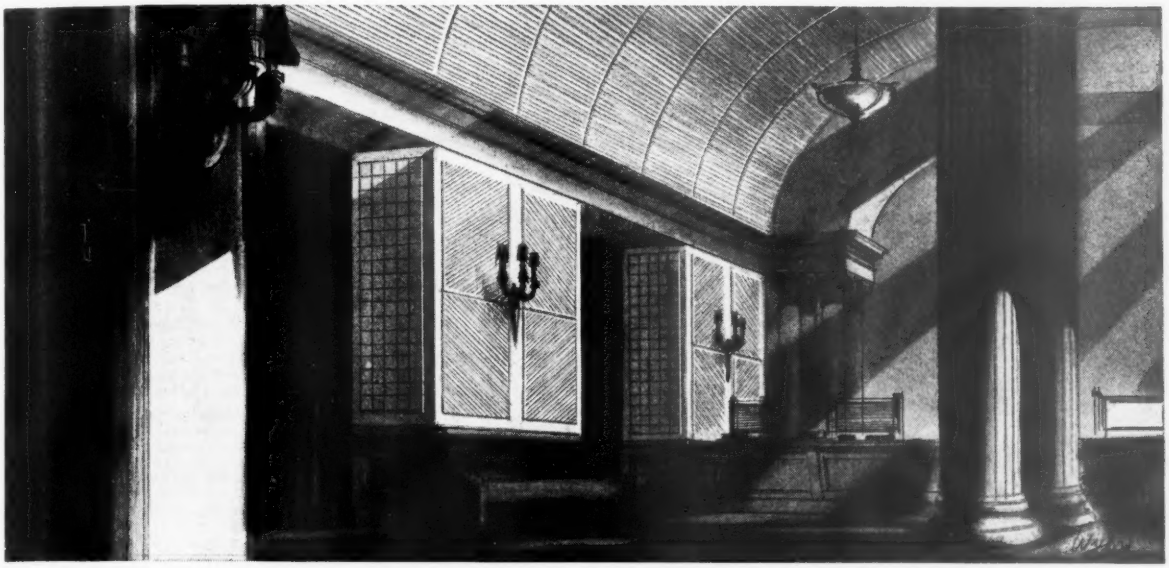

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The main block is 180ft. long and 40ft. wide, with fair-faced round-nosed exposed mullions at 4ft. centres. Constructional stiffness is provided by means of the two end walls and the precast lift and staircase wells. Each suspended floor acts as a horizontal wind girder, construction consisting of 3ft. 6in. wide Bison hollow prestressed units with 6in. wide *insitu* concrete joints between, these being aligned with the mullions. Stirrups, projecting from the precast floor slabs, transmit the horizontal wind shear. Horizontal steel is used to tie the H-frames together and also to tie them into the *insitu* joints.

The mullions are integral with the H-frame, thus avoiding the use of artificial mullions. One result of the architect-engineer co-operation was establishment of practicable mullion shapes and tolerances, these being designed exactly to produce the desired architectural features.

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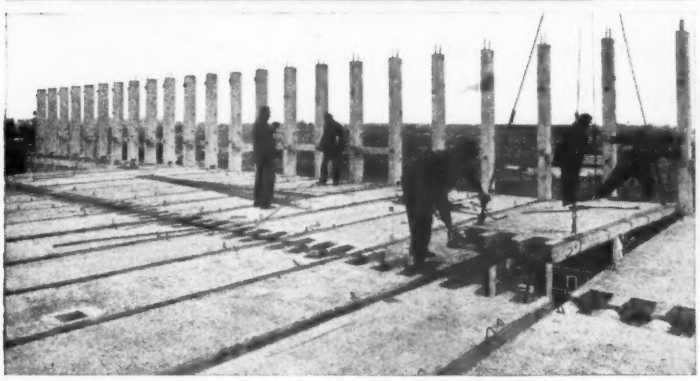

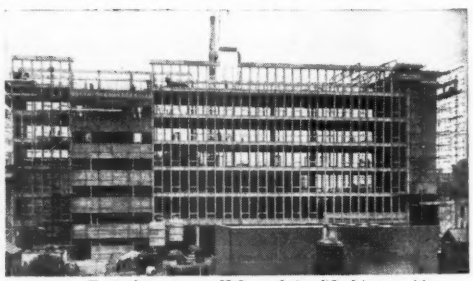

TOP LEFT: *Typical two-storey H-frame being lifted into position, showing repetition along main elevation.*
ABOVE: *General layout of precast concrete H-frame between first floor and roof.*
LEFT: *Precast prestressed concrete floor slabs being fixed, showing projecting stirrups. About 400 floor slabs of this type were used.*

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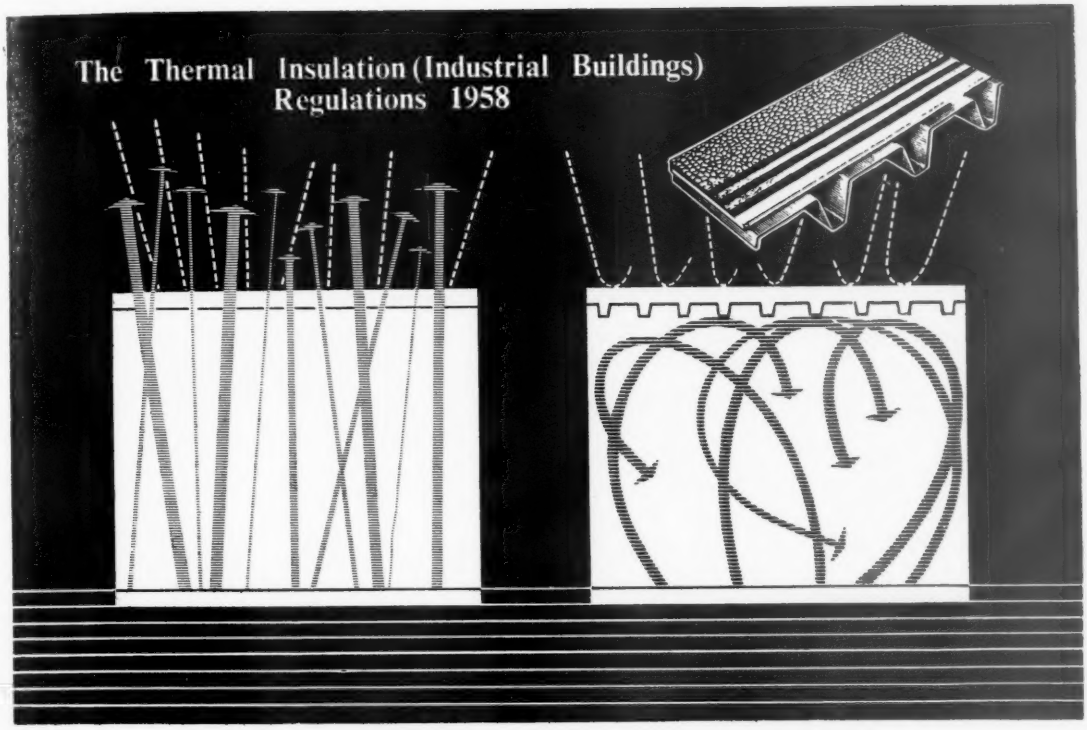

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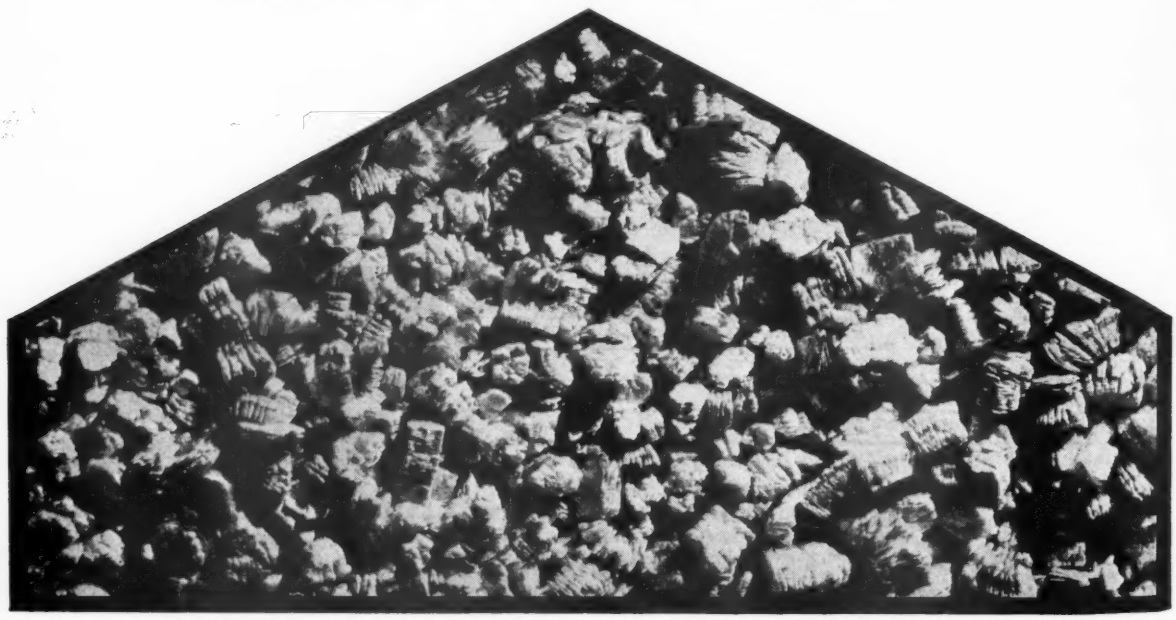

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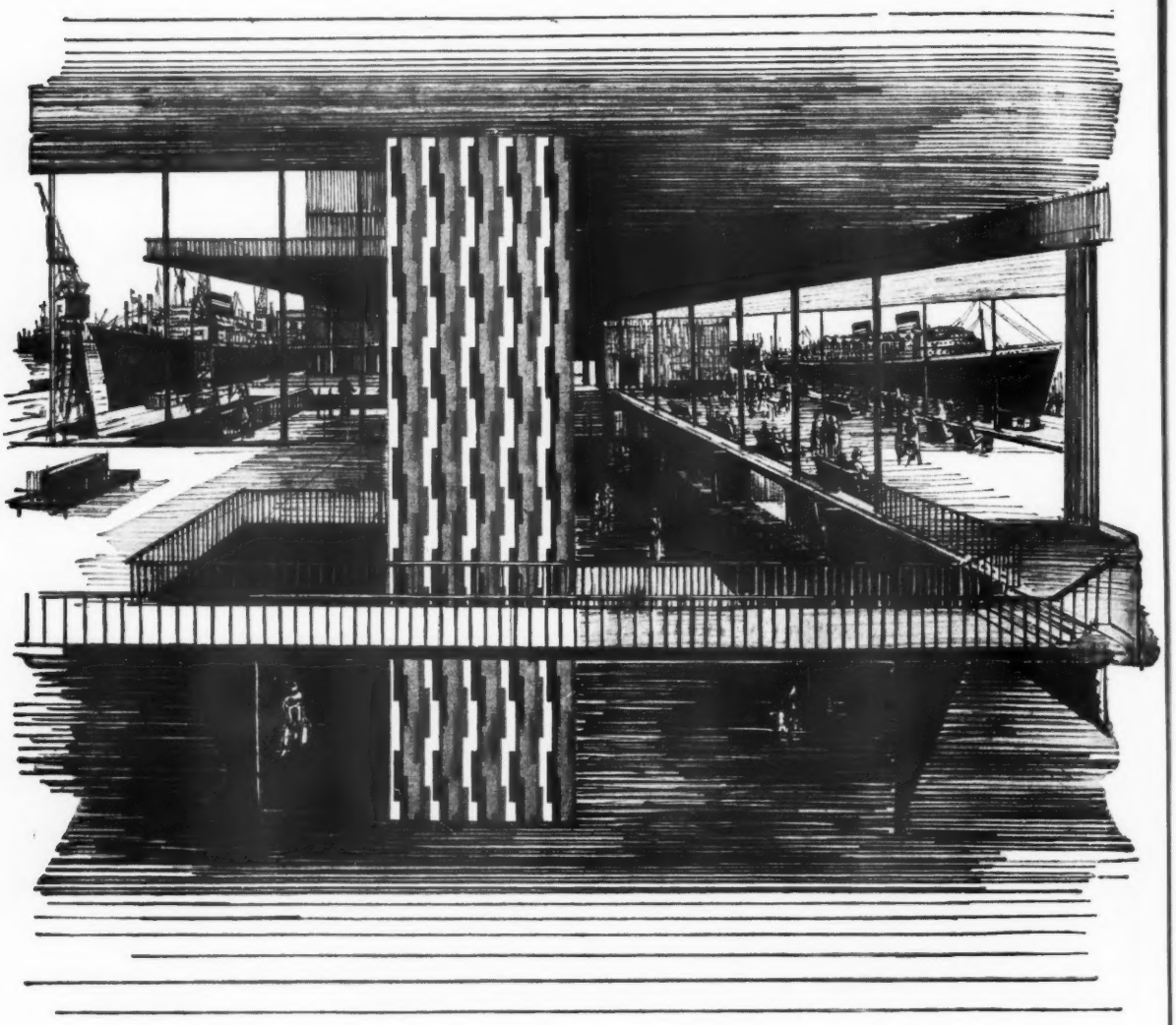

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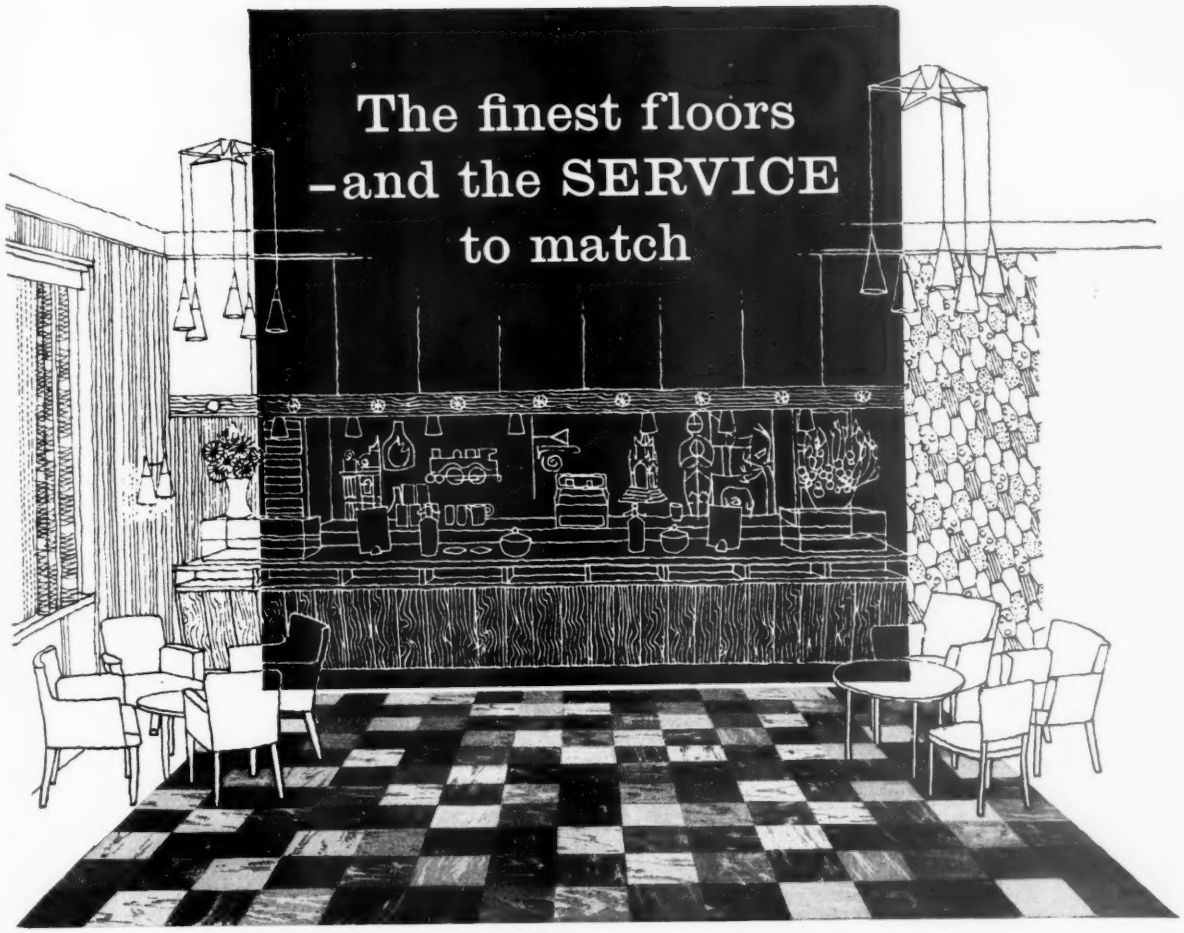

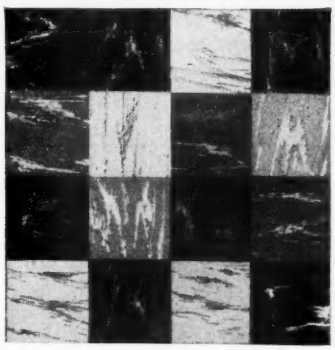

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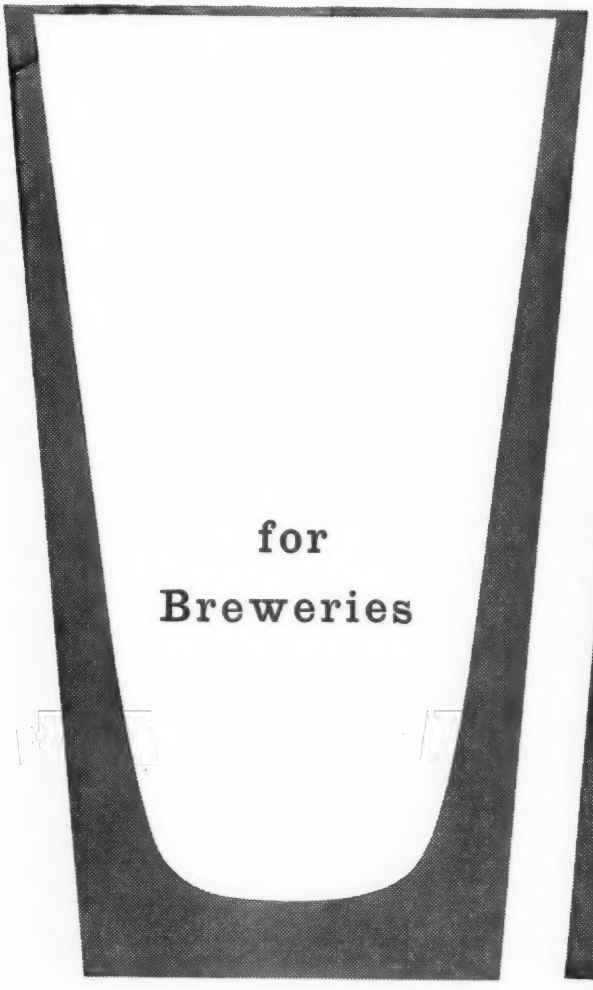

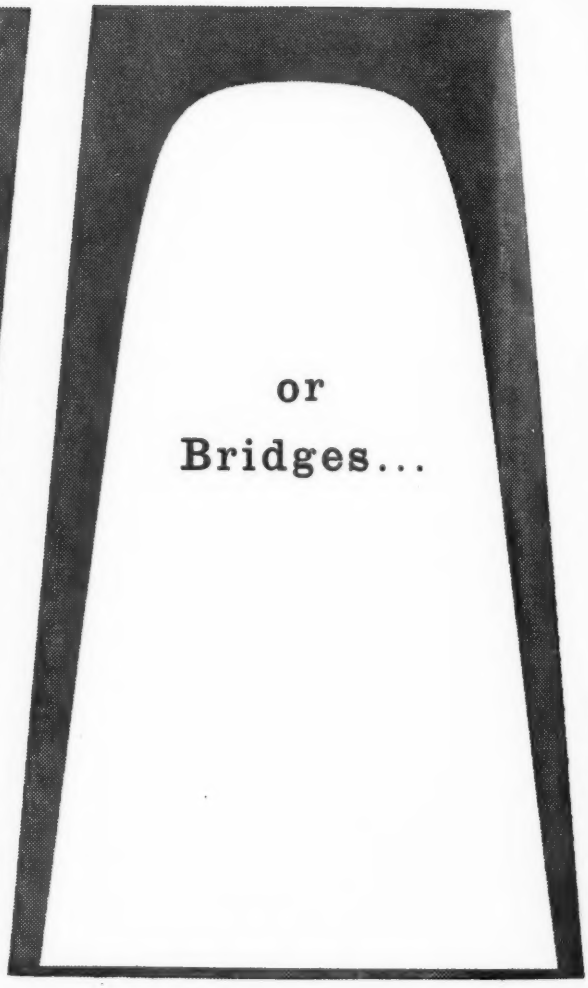

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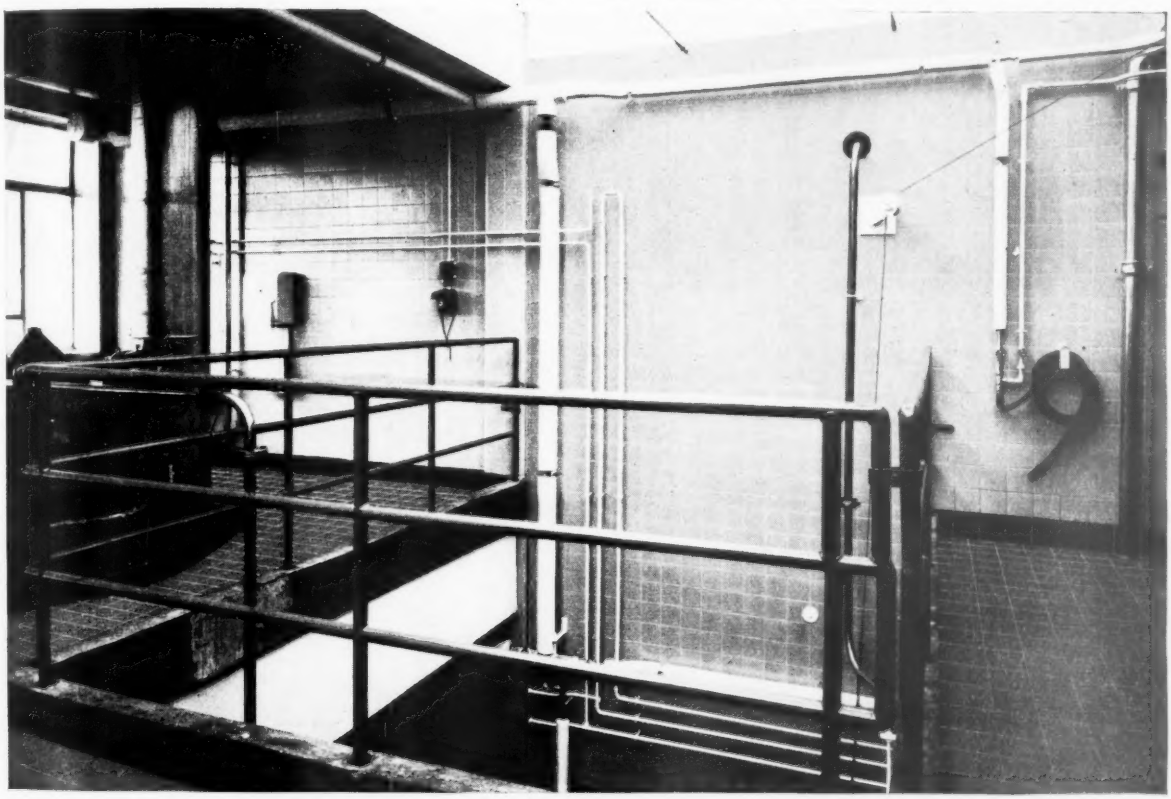

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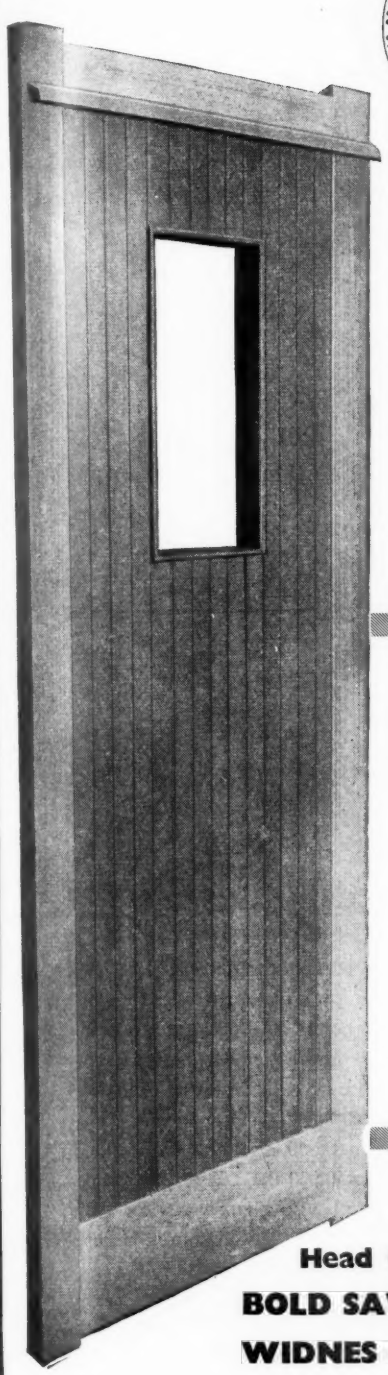

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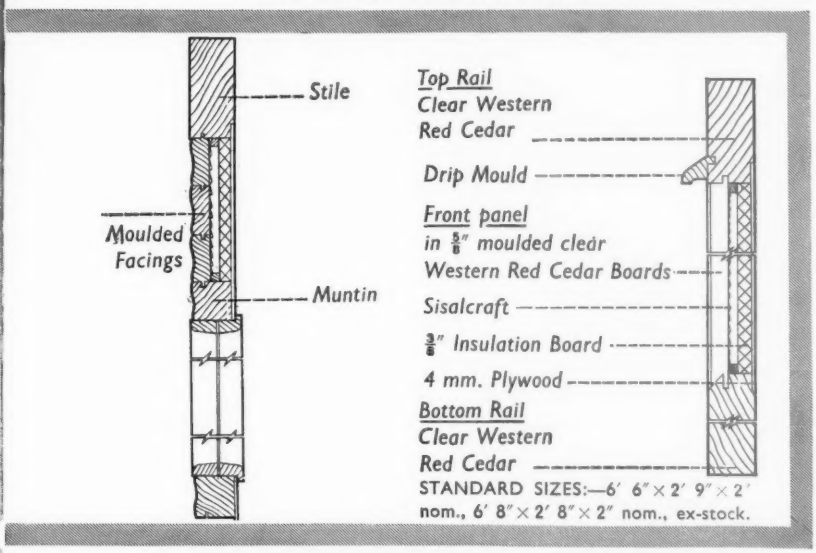

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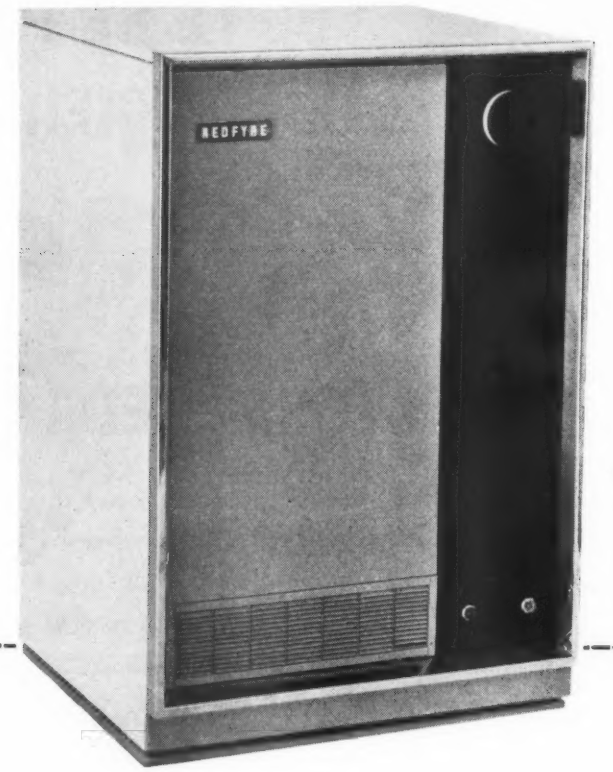

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The Centramatic 50 comes as a packaged unit. It requires no specialised installation techniques. The local supplier can service it yearly, and that is all the attention it should need.

The Redfyre Centramatic 50 is suitable for heating systems requiring up to 50,000 B.T.U's per hour and costs £128 retail. There is also a larger version, the Redfyre Centramatic 80, which has an hourly output of 80,000 B.T.U's and costs £149 retail.

Full technical specifications of the Redfyre Centramatic oil-fired boilers are available. Please write to

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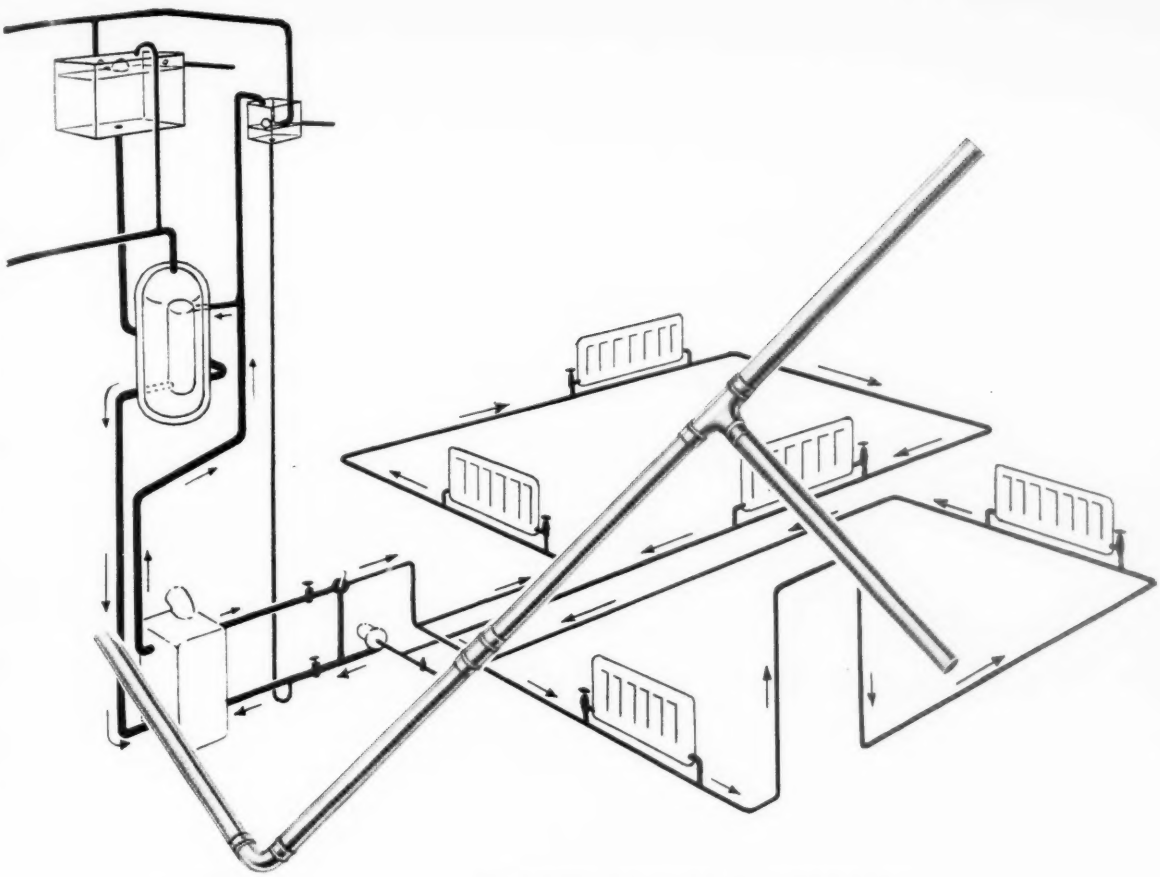

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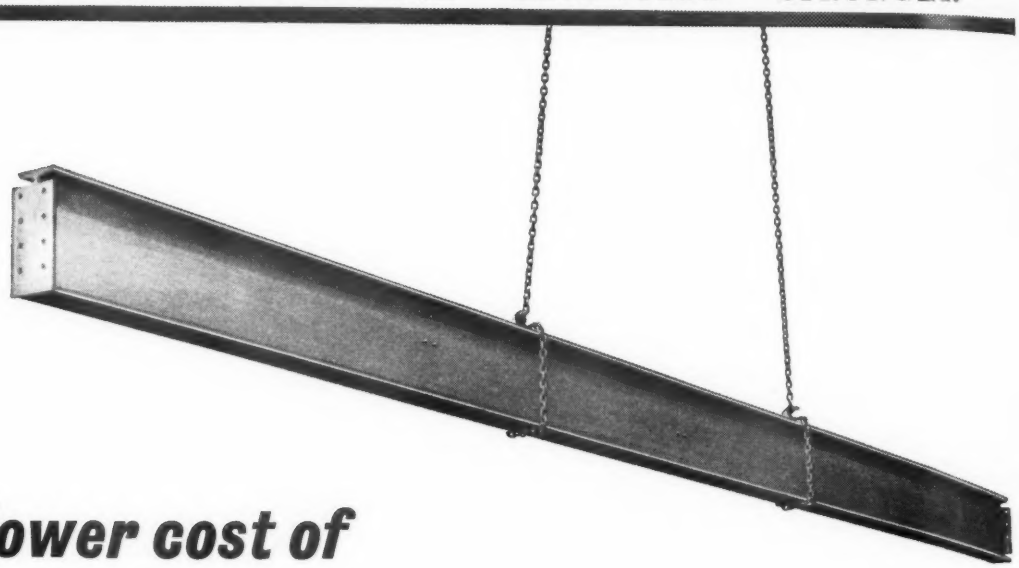

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MARCH 1960 THIRD SERIES VOL. 67 NUMBER 5 THREE SHILLINGS AND SIXPENCE

EDITORIAL

Sir Giles Gilbert Scott

It is with the greatest sorrow that the JOURNAL records the death on 8 February of Sir Giles Gilbert Scott, O.M., R.A., Past President, at the age of 79.

The following tribute comes from Mr. C. D. Spragg.

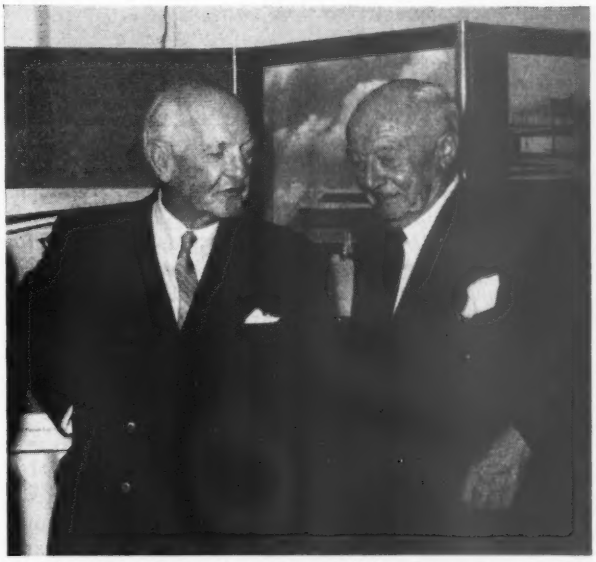
'The ranks of the Past Presidents have been sadly reduced in the last twelve months—first W. H. Ansell, then H. S. Goodhart-Rendel and C. H. Aslin and now Sir Giles Gilbert Scott. Sir Giles was the senior surviving Past President and those who knew him well and worked with him will mourn the death of a distinguished architect and a delightful man. Others will write of his great architectural achievements but I suppose Liverpool Cathedral will be the building most readily associated with Sir Giles's name. On my visits to Liverpool I always tried to find time to visit the cathedral and watch the steady progress of the work. What a wonderful setting it made for the inspiring service which formed part of the 1949 Conference! None of those who took part in that service is likely to forget the memorable occasion.

'But it is to Sir Giles's work for the R.I.B.A. and the profession that I would like to pay a brief tribute. He was not a great "committee" man and although he had served upon the R.I.B.A. Council he had not taken a prominent part in Institute work until he was called upon to be the Centenary President. And how well he carried out all the many and different tasks which fell to him in that capacity. It all seemed to come to him so naturally and he never "flapped"—the opening of the Portland Place building by King George V and the famous Centenary dinner in Guildhall—he made an admirable and adequate host on occasions such as these. At his side was Lady Scott whose friendliness and charm endeared her to all at the R.I.B.A. and whose early death we mourned.

'Previous to his presidency Sir Giles was one of the distinguished jury of five which made the award for the R.I.B.A. Building Competition in favour of Grey Wornum. His light-hearted comments on some of the designs submitted gave relief to the jury in their gigantic job of assessing the merits of some three hundred designs.

'Sir Giles took an active part in the development and work of the Building Centre. His other great interest was golf. He was a first-class player and took a great interest in the R.I.B.A. Golfing Society of which he was at one time Captain and later President. In recent years when he was not playing so much I sometimes used to meet him watching the "pros" at some golf tournament or other. He was always the same—never effusive but always natural and it was a delight to listen to his crisp comments on the game and the players.

'He will be sadly missed by a host of friends.'



Sir Giles, who was President of the Building Centre Council, with Mr. Frank Yerbury at the Yugoslav exhibition, October 1959

Mr. A. C. Hartley

The JOURNAL offers its condolences to the Institution of Civil Engineers whose President, Mr. A. C. Hartley, C.B.E., died on 28 January. Mr. Hartley, a distinguished oil engineer who had played an important part in developing 'Pluto' and 'Fido' of wartime fame, had been President only since November 1959, and would have been invited to take the Chair at the Joint Meeting with the Civils on 15 March.

The new President is Sir Herbert Manzoni.

Appointment of Chief Information Officer, R.I.B.A.

Mr. Malcolm MacEwen, M.A., Ll.B., has been appointed Chief Information Officer by the Council of the R.I.B.A. and will take up his duties in the latter part of April this year. He will assume overall responsibility for external relations including press, publications and public relations as well as internal relations which cover liaison with Allied Societies and members and the R.I.B.A. JOURNAL.

Mr. MacEwen is aged 48, and was educated at Rossall, Aberdeen University, and Edinburgh University. He qualified as a solicitor in 1937, and practised until 1941. Although a 2nd Lieutenant in the Territorials in 1930, he had been invalided out in 1934 because of an injury, and was therefore rejected for military service on the out-break of war.

On ceasing to practise as a solicitor in 1941, Mr. MacEwen became a free-lance journalist. From 1943 to 1956 he was with the People's Press Printing Society Ltd., mostly as a House of Commons correspondent. In 1957 he joined the Architectural Press and became Chief Assistant Editor of the ARCHITECTS' JOURNAL.

He was responsible for the recent 'Motropolis' issue of the ARCHITECTS' JOURNAL. Throughout the period 1941 to 1960 he has been a free-lance journalist, and has appeared in PUNCH. More recently he has taken part in T.V. programmes on architectural topics. Mr. MacEwen was for three years a county councillor in Ross and Cromarty, but now lives in Hampstead. His wife, who was trained at the A.A., works in the L.C.C. Architect's Department. They have three children and like to spend holidays touring with a caravan.

New Year Honours

Congratulations are also accorded to the following members on whom honours were conferred but news of which had not been received at the time of going to press of the last JOURNAL.

M.B.E. Major K. G. Harvey, D.S.O. [*A*], Royal Rhodesia Regiment.

Bernard F. Matthews [*Retd. F*] for services to the European community in India.

Engineer and Architect—Architect and Engineer

As mentioned in the JOURNAL for February, a further joint meeting between members of the Institution of Civil Engineers and of the R.I.B.A. will take place at the R.I.B.A. on Tuesday 15 March at 6 p.m., when papers will be read on the subject of 'The Impact of Motorways on Cities'. Mr. Rowland Nicholas, C.B.E., will present the paper on behalf of the Institution of Civil Engineers, and Mr. Frederick Gibberd, C.B.E. [*F*], that on behalf of the R.I.B.A. These will be followed by a general discussion from the floor. Copies of the papers are now available to those members who would like the opportunity of reading them beforehand, and may be obtained on written application to the Secretary, R.I.B.A., or from the inquiry desk at 66 Portland Place, W.1.

The Design of Farm Buildings

The farmer is not one of the architect's best clients: in fact not much more than 3 per cent of farm building work is certified by architects. However, there is no reason why this should be accepted as a permanent figure, provided it is realised by the would-be designer of farm buildings that he must keep abreast of agricultural developments.

To encourage any members who are looking in this direction, the Bledisloe Memorial Lecture given by Mr. D. S. Soutar [*A*], adviser to the Farm Buildings Department of the North of Scotland College of Agriculture, is printed in this issue. It necessarily includes a great deal of farming expertise, invaluable if the architect is to win the respect of his client as a preliminary to persuading him to have his buildings well designed and properly sited. The average farmer is not the kind of man who will cheerfully pay an architect's fees if he has to teach rather than brief him.

It is hoped therefore that the great majority of members who have no intention of entering this field will bear with this excursion into agriculture. They will, anyway, wish to see farm buildings raised from the low level they now occupy, and this can only be achieved by backing up members like Mr. Soutar whose present activities are limited to giving advice. As he rightly says, 'Shoddy building is not traditional to the country craftsman, but such is often forced upon him by the farmer, and while the initial outlay may be "cheap" it is far from economical in the long run.'

The Profession in Contemporary Society

William Allen [*A*], of the Building Research Station, is to read a paper about professions in general and our profession in particular at the R.I.B.A. on 8 March. The subject is sizeable and important. The profession has gone through a period of major development since the war: development reflected both in practice and in the Institute itself. It therefore seems a good time to look at some of these changes, and the pressures and needs they represent, so that we may see the pattern that is emerging for the future.

Mr. Allen will discuss relations between science, industry and the professions generally, and more particularly our relations with the other partners in the building industry. The Institute and the structure of the profession will be the subjects of other parts of his discussion.

The Report of the Royal Commission on Doctors' and Dentists' Remuneration, which includes many data on other professions, has just been published. It seems, therefore, that there could be no better occasion for the profession to discuss itself.

R.I.B.A. Clubroom

The new clubroom and bar on the second floor at the R.I.B.A. will be open to members and students from 22 March between the hours of noon and 2.30 p.m., and from 5.30 to 7.30 p.m.

'Architecture Today' Exhibition

The Royal Institute and the Arts Council of Great Britain are to present jointly under the above title an exhibition at the Arts Council Gallery, 4 St. James's Square, in July 1961, at the time when the I.U.A. Congress will be taking place in London, for which the R.I.B.A. will act as hosts.

The exhibition will be selective and will aim to show some of the best work of the past ten years: it will not attempt to represent the general achievement in particular categories of building.

This is a preliminary announcement about the exhibition and further details will appear in the May JOURNAL, when British registered architects with offices in this country will be invited to apply for entry forms if they wish to submit material for consideration by the selection committee in due course.

Entries will not be limited to buildings in Great Britain and work completed abroad by British registered architects will be welcomed.

A.R.C.U.K.: Code of Professional Conduct

The latest (January 1960) edition of the *Code of Professional Conduct* issued by the Architects' Registration Council appears in a new format admirably designed by Mr. Ian Bradbury, M.S.I.A.

Typographically this solemn document now resembles a dignified prose poem, and is altogether more pleasant to read and handle. Every architect is receiving one free copy, and extra copies can be obtained from 68 Portland Place, price 1*s.* (post free 1*s.* 3*d.*).

A.R.C.U.K. asks architects to bring the *Code* to the notice of their staffs.

Exhibition of Turkish Architecture Postponed

The exhibition of Turkish architecture which was to have been shown at the Royal Institute at the end of March has unfortunately had to be postponed. The Turkish Architects' Society and the Ministry of Public Works who are jointly sponsoring the exhibition have not yet assembled all the material which they wish to display but it is hoped that the exhibition will be ready later in the year.

First comments by the Royal Institute of British Architects on the Report of the Royal Commission on Doctors' and Dentists' Remuneration

WHY has society placed such a relatively low value on the services of the architect? The disclosure of the architect at the bottom of the scale of professional earnings, published in the Report of the Royal Commission on Doctors' and Dentists' Remuneration, brings into sharp focus the fundamental questions that have been concerning the profession and the Institute in recent years.

Is the architect's standard of education and training on a comparable level with that of other professions?

Have we flooded the market with too many architects and thus debased the coinage?

What kind of service, both in quality and extent, ought the architect to provide? To what scale of fees does this correspond? Is the R.I.B.A. scale too low in relation to the volume and complexity of work that modern buildings require from the architect, and would the client be willing to pay more?

Could the level of efficiency in architects' offices be increased to enable more adequate rewards to be given within the existing scale of fees? Should the architect's work be differently organised, with greater reliance on non-professional assistance, on standardisation, on central information and technical services?

Is there any real public understanding of the functions of the architect?

Questions also need to be asked about the other professions to try to understand the factors that may have influenced the present relativities. Do they have a higher proportion of members working in industry, with its relatively bigger rewards? Has their organisation of private practice any features from which architects might profit, e.g. the solicitor with his managing clerk? In public service, do other professions have such a high proportion of their members in the relatively junior grades?

The Commission's report is likely to serve as a sharp thorn in the flesh of the various Committees of the Institute that are considering these problems, although much more in the way of both fact-finding and heart-searching will be needed before either they or the profession at large find the answers—or indeed can interpret this report satisfactorily.

Some analysis of the findings of the survey of architects' incomes in relation to those of other professions will appear in the April issue of the JOURNAL.

Top picture: Mr. W. Allen [*A*] and Mr. Edward Holman [*F*], with the Deputy High Commissioner for Canada, Mr. G. Ignatief. *Lower picture:* The leader of the Canadian party, Mr. J. F. Boux, with Mr. Ernest J. Smith, M.R.A.I.C. In the background Mrs. Soloninka and Mr. Hubert Bennett [*Hon. Treasurer*].

Visit of Canadian Architects and Engineers

A cocktail party at which members of the Council and of the Commonwealth Conference Committee entertained a party of eighty Canadian architects and engineers was held at the R.I.B.A. on 1 February. The Canadians were here to learn about the latest developments in concrete design and construction. The guests were received by the President and Mrs. Spence and included Mr. G. Ignatief, Deputy High Commissioner for Canada, and Mrs. Ignatief, and Dr. R. P. Andrews of the Cement and Concrete Association, and Mrs. Andrews.

Junior Liaison Committee

A meeting organised by the Institute of Builders' Licentiate Discussion Group and sponsored by the Junior Liaison Committee will be held in the Henry Jarvis Hall at the R.I.B.A. on Thursday 24 March at 6.30 p.m. Light refreshments will be available from 6 p.m. The meeting will take the form of a short play entitled *The Ultimate Cost, or A Claim for Extras*, which will be presented by members of the Institute of Builders' Licentiate Discussion Group, and it is hoped that as many junior members and Students as possible will attend to give encouragement to the work of the Junior Liaison Committee. Tickets will not be needed but it would be of assistance if those who propose to attend could notify the Secretary, R.I.B.A., as soon as possible.

R.I.B.A. Symposium on 'The Living Town'

The report of this symposium is obtainable on application to the Secretary, R.I.B.A., price 7*s.* 6*d.* post free.

Council Business

The Council met on 2 February with the President, Mr. Basil Spence, in the chair.

'Higher Council'. The Secretary reported that on 12 January the President, supported by the Hon. Secretary and Mr. Frederick Gibberd [*F*], had met the presidents and secretaries of the Institution of Civil Engineers, the Institution of Structural Engineers, the R.I.C.S., T.P.I. and I.L.A., at an informal luncheon to discuss Mr. Basil Spence's suggestion that there should be a 'Higher Council' representative of all those professions concerned with land use.

It was agreed that the officers present should each seek the agreement of their respective councils to the establishment of co-ordinating machinery on the lines envisaged, and it was suggested by the R.I.B.A. that if agreement was reached another meeting should be held soon to discuss central redevelopment and the preservation of green belts, two subjects which the Royal Institute considers typical of the issues worth pursuing jointly.

The Secretary reported the death of **Mr. David M. Nenk**, Under-Secretary for Finance and Accountant-General, Ministry of Education, who had been closely associated with the work of the profession concerning the ministry's building programme.

Regional Representation on the Council

The Constitutional Committee (Chairman: Mr. A. W. Cleeve Barr [*A*]) held a further joint meeting with the presidents of the Allied Societies in the United Kingdom on 4 January, and the remaining issues have now been settled. The following is a summary of the points of agreement reached:—

1. In principle each Allied Society should have one representative on the R.I.B.A. Council, but those societies with very large membership or difficult geographical areas could have some additional representation on the lines of the 'basic distribution' set out below.
2. Societies with more than one representative to ensure that the representatives are responsible for liaison with the various geographical areas within their boundaries. Alternatively, the larger societies to consider subdivision into smaller societies.
3. The ratio of regionally elected to nationally elected representatives to be roughly 50–50.

(The representatives of the S.E.S.A., the Birmingham and Five Counties A.A. and the Manchester S. A. having expressed reservations as to the exact numbers of representatives, it was understood that the basic distribution would be studied further by the allied societies within the general principles set out in 1, 2 and 3 above.)

4. Further meetings to be arranged with representatives of the R.I.A.S., R.I.A.I. and the R.S.U.A. to discuss their particular problems. It is hoped that they will be able to fall in line with the general arrangements now agreed within England and Wales.
5. Overseas representation to be discussed between the Constitutional Committee and the new Commonwealth Conference Committee.
6. The problem of financial allocations from the R.I.B.A. to the allied societies to be referred to a sub-committee of allied societies' presidents and to be dealt with directly by the Finance and House Committee.

7. The secretary to finalise administrative arrangements concerning the boundaries between the Liverpool, Manchester, North Wales, North Staffordshire and Preston societies.

BASIC DISTRIBUTION OF COUNCIL SEATS

Excluding Overseas Representation

ELECTED OFFICERS	President	1	
	Past Presidents	2	
APPOINTED BY COUNCIL OR *ex officio*, NOT NECESSARILY FROM ELECTED MEMBERS	Vice-President	1	
	Chairman, Allied Societies' Conference	1	
	Chairman, Board of Architectural Education	1	
	Chairman, R.I.B.A. Registration Committee	1	
			7
REGIONAL	Scotland	4	
	Ireland	2	
			6
	Northern Area		
	Northern A.A.	1	
	Sheffield, S. Yorks S.A.	1	
	West Yorks S.A.	1	
	Yorks and E. Yorks A.S.	1	
	Notts, Derby and Lincs S.A.	1	
	Liverpool A.S. (*without N. Wales*)	1	
	*Manchester S.A. (*without Preston*)	1	
	Preston S.A. (*to be an Allied Society*)	1	
			8
	Western Area		
	N. Wales A.S. (*to be an Allied Society*)	1	
	S. Wales I.A.	1	
* *Final agreement on number of seats reserved for further discussion.* (*See para.* 3 *of Points of Agreement.*)	*Birmingham and Five Counties A.A.	2	
	Devon and Cornwall S.A.	1	
	Hants and I.O.W. A.A.	1	
	Bristol and Somerset S.A.	1	
	Wilts and Dorset S.A.	1	
	Gloucestershire A.A.	1	
			9
	Eastern Area		
	*South Eastern S.A.	3	
	Berks, Bucks and Oxon A.A.	1	
	East Anglian S.A.	1	
	Essex, Cambs and Herts S.A.	2	
	Northants, Beds and Hunts A.A.	1	
	Leicestershire and Rutland S.A.	1	
			9
		26	26
NATIONAL			32
	TOTAL		71

Note: Two Vice-Presidents, Honorary Secretary, Honorary Treasurer } to be appointed from among elected members of Council

Reception for Professor Nervi. It was agreed to hold a reception on the evening of 6 April for Professor Pier Luigi Nervi, at which the Council will be the hosts.

Review of Housing Standards. The reply to the questionnaire sent out by the Sub-Committee on Housing Standards of the Central Housing Advisory Committee, considered by the Council at their December meeting, and substantially revised since, has been completed and returned to the Ministry of Housing and Local Government. See page 175.

The Brick Supply. Mr. Clifford Culpin, O.B.E. [*F*], the R.I.B.A. Representative on the National Consultative Council of the Building and Civil Engineering Industries, reported that at the meeting of 25 January the brick shortage had been discussed and that the Ministry of Works were urging builders to avoid double ordering and over-ordering, and that there should be a wider selection of bricks. Extra output had been arranged and this year's production should equal that of last year.

The builders' representative, however, took a serious view of the situation. This year all bricks are going out as fast as they can be produced, and urgent consideration of the use of alternative materials is advisable.

Review of the R.I.B.A. Journal. The Council received the report of the Committee appointed to carry out a review of the present style and contents of the JOURNAL, both editorial and advertising, under the chairmanship of Professor J. H. Napper.

The Council approved the arrangements made to put into effect the proposed changes in style and contents so that the first issue will appear in May. In its new format the JOURNAL will be printed on A4 size paper, and will be dispatched to members packed flat.

The Council set up a standing committee with a continuing watching brief on the style and contents of the JOURNAL with a duty to report to Council any further changes they consider desirable from time to time. The committee will be the present committee, consisting of: Chairman: Professor J. H. Napper [*F*], A. W. Cleeve Barr [*A*], J. Eastwick-Field[*A*], W. G. Howell [*A*], Professor F. Fielden [*F*], H. Swain [*A*] and Hubert Bennett [*Hon. Treasurer*].

R.I.B.A. Diary

THURSDAY 18 FEBRUARY TO WEDNESDAY 9 MARCH. Exhibition by Crafts Centre of Great Britain.

TUESDAY 8 MARCH, 6 p.m. General Meeting. *The Profession in Contemporary Society*, by Mr. W. A. Allen, B.Arch. (Manitoba) [*A*].

THURSDAY 10 MARCH, 6 p.m. Annual Discourse. *Architecture in Evolution*, by Dr. C. A. Doxiadis.

TUESDAY 15 MARCH, 6 p.m. Joint meeting with Institution of Civil Engineers at the R.I.B.A. Papers on *The Impact of Motorways on Cities*, by Mr. Frederick Gibberd, C.B.E. [*F*] and Mr. Rowland Nicholas, C.B.E.

MONDAY 21 MARCH, 6 p.m. Library Group. Mrs. Mildred Archer will introduce an evening on *The Daniell Drawings*.

TUESDAY 22 MARCH, 6 p.m. General Meeting. *Thinking Ahead about the Building Industry*, by Mr. Peter Trench, O.B.E., T.D., B.Sc.

WEDNESDAY 23 MARCH, 2 p.m. to 8 p.m. One-day symposium on *Design of Shops and Shopping Centres*.

THURSDAY 24 MARCH, 6.30 p.m. Junior Liaison Committee Meeting with Institute of Builders at the R.I.B.A.

FRIDAY 25 MARCH TO SUNDAY 27 MARCH. Cost Control Conference, Nottingham.

TUESDAY 29 MARCH, 6.30 p.m. Discussion on *Design and Costs*.

THURSDAY 31 MARCH, 7 p.m. Architects' Christian Union. Rev. K. F. W. Prior. Refreshments 6.30 p.m.

TUESDAY 5 APRIL, 6 p.m. General Meeting. Presentation of Royal Gold Medal to Professor P. L. Nervi.

TUESDAY 5 APRIL TO TUESDAY 12 APRIL, Monday to Friday 10 a.m. to 7 p.m., Saturday 10 a.m. to 5 p.m. Exhibition of Professor P. L. Nervi's work. (Excepting 6 APRIL.)

Brasilia

by Professor Sir William Holford, P.P.T.P.I. [*F*]

Given at the R.I.B.A. on 8 December 1959. The President, Mr. Basil Spence, O.B.E., T.D., A.R.A., A.R.S.A., in the Chair

MY FIRST AIM is to transport you all from a grey winter's evening in London to the sun-baked central plateau of Brazil. There the country's three great river systems—the São Francisco, the Amazon and the Prata—have their origins; and there the sky is enormous with cumulus clouds and the earth as purple-red as the word *brasiliero* implies.

I hope to accomplish this feat of transportation by showing coloured photographs of the new federal capital as it was in 1957, and as it is today. It will not be altogether successful because, as every lecturer knows, the eye is conditioned by the mind—more so perhaps in England than in other places. But in talking of Brazil in London some attempt has to be made to account for such a fundamental difference of approach, of atmosphere, of point of view. It is not simply a question of language and climate and the change in the time-scale between the old world and the new. It is a question of temperament. It is the difference between a routine and an adventure.

In the ding-dong game of international architectural football, in which goals are seldom scored, Brazil has suddenly taken the ball. Some of the spectators are highly delighted, some are alarmed, but nearly all are on their feet with expectation. It is a long time since town-building, civic engineering, and architecture on a grand scale engaged the attention of a whole continent to the extent that Goiania, Belo Horizonte, and now Brasilia are doing, in ascending order of magnitude. For the poor and illiterate this town-building is a symbol which they can see and understand: it offers them employment and a shield against malnutrition and disease. For the middle classes and the civil servants it offers hope and security, education for their children and opportunities for a better life. Even for the sophisticated, Brasilia is in fashion. Although they complain bitterly of the taxation necessary to support it, of the extravagance of its constructions, and of the administration that runs it, they are intelligent enough to realise that this gigantic enterprise has reached the point of no return; that while they were grumbling others have been building; and that no matter what political upheavals are to come, Brasilia is already a great national asset, a source of pride, an urban centre planted in the desert, but with a hinterland of such infinite richness in terms of water power, agriculture, mineral resources and human material, that it could flower prodigiously. So much, in fact, is invested already that although it is risky to go on, it would be riskier still to look back.

No one, as far as I can judge, has any disposition to do so. The quality above all others that distinguishes their building activities from our own is *confidence*. James Thurber once said: 'We have cats the way some people have mice.'

Brazilians have new buildings and new landscapes the way some people have new kitchenware. In Brasilia there is nothing to preserve; so there are no preservation societies. Nor are there any committees—as yet—to give planning permission, safeguard amenities, or protect the interests of owners. The land is federal. But all this would count for nothing if it were not for the buoyant confidence of architects and clients alike in what is being designed and built. The climate of opinion is comparable to that of Elizabethan England. There is the same spirit of adventure in the arts and sciences, the same unorthodox finance; there is great faith in the future—combined with fatalism; resistance to taxation, but acceptance of state enterprise; there are extremes of wealth and poverty, with urban populations growing fast, and the rural territories—corresponding to the colonial territories of Elizabethan England—thinly peopled and only partially explored.

It is against this adventurous background, poetic as well as practical, that the story of Brasilia is set.

Brazil was discovered in 1500; it achieved independence as an empire in 1822, and became a republic in 1889. The seat of government of the United States of Brazil is to be transferred from Rio de Janeiro to Brasilia on 21 April 1960.

(*Sir William Holford then showed nearly ninety slides, commenting on each.*)

That is the end of my running commentary.

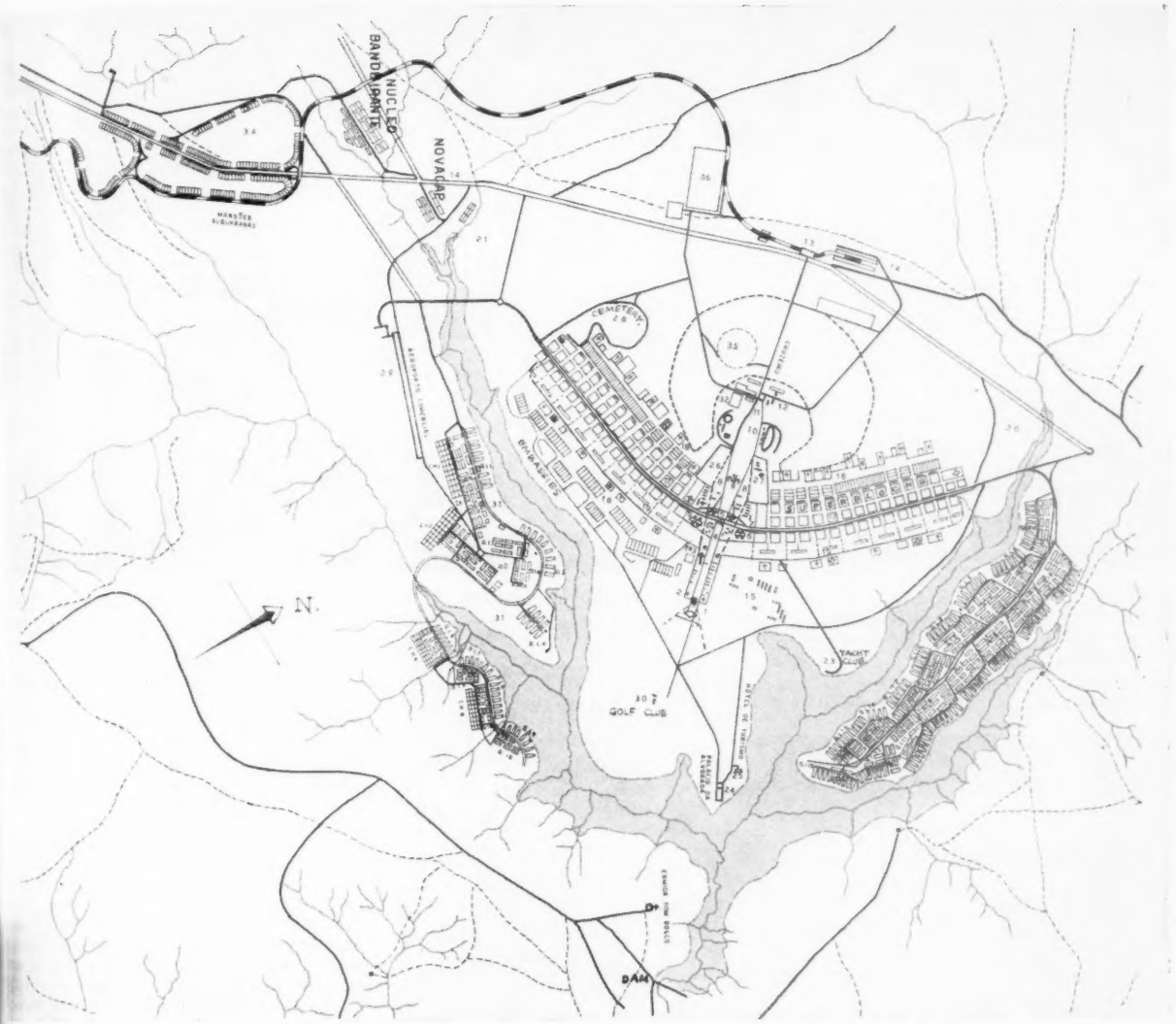
It is certainly too early for me, perhaps for anyone, to sum up in terms of success and failure. But in view of the strong opinions that are already held, both favourable and unfavourable, on Brazilian architecture in general and this adventure on the Planalto in particular, I would like to conclude with a personal comment on the significance of this experiment in town design.

It seems to me that we are witnessing in Brasilia the vigorous and formative stage of a process which, if we applied it retrospectively to Greek architecture we should call 'archaic', but in this age of advanced technology and social confusion might be better described as an approach to a new order. It is a humanist approach: an attempt to make sense out of an environment not yet fully understood, and in the doing of it to extend the possibilities of fulfilment for human personality and human society.

There is no Parthenon at Brasilia. There is nothing which the collector of modern art, with his highly developed sense of market values, can yet regard as a flawless specimen of its period. He does not even know for certain what its period is. On this contemporary Acropolis he can receive brief impressions of sudden and breath-taking beauty. He can glimpse the modern equivalents of the Propylaea, of an Erechtheum not altogether resolved, of a Temple of Wingless Victory. He will also find, as a sophisticated European, a great deal of imperfection, judged by the best standards of Swiss, Italian or American architecture, some curiously old-fashioned techniques of planning—particularly on the social side—and some things which will strike him as curious, or unpleasant, or even vulgar.

Yet there is an unmistakable sense of direction which permeates the whole design organisation. There is the faith expressed in Lucio Costa's pilot plan, in his remarkable report, and in his subsequent adaptation of the plan to meet the exigencies of construction—namely, that it is possible to express what Palladio and the 16th-century humanists were striving for, and what Le Corbusier forecast with his plan for St. Die and has partially realised at Chandigarh, a sort of mystical unity for the social and architectural design of a whole town, strong enough to absorb the technical improvements that are bound to come, and to survive the individual monuments that will go out of date.

Oscar Niemeyer describing to President Kubitschek (*centre*) and Dr. Pinheiro (*left*) his model for the Alvorada Palace, 1956



Location Plan of Brasilia, as revised in 1959, by Lucio Costa. The Alvorada Palace is at the point of the south-east peninsula, with the Tourist Hotel north of it and the Golf Club on the west. The wings of 'superblocks' are about seven miles from end to end. The Government Esplanade is at right angles to the main residential avenue and ends in the Place of the Three Powers. The embassies face the lake on the west side

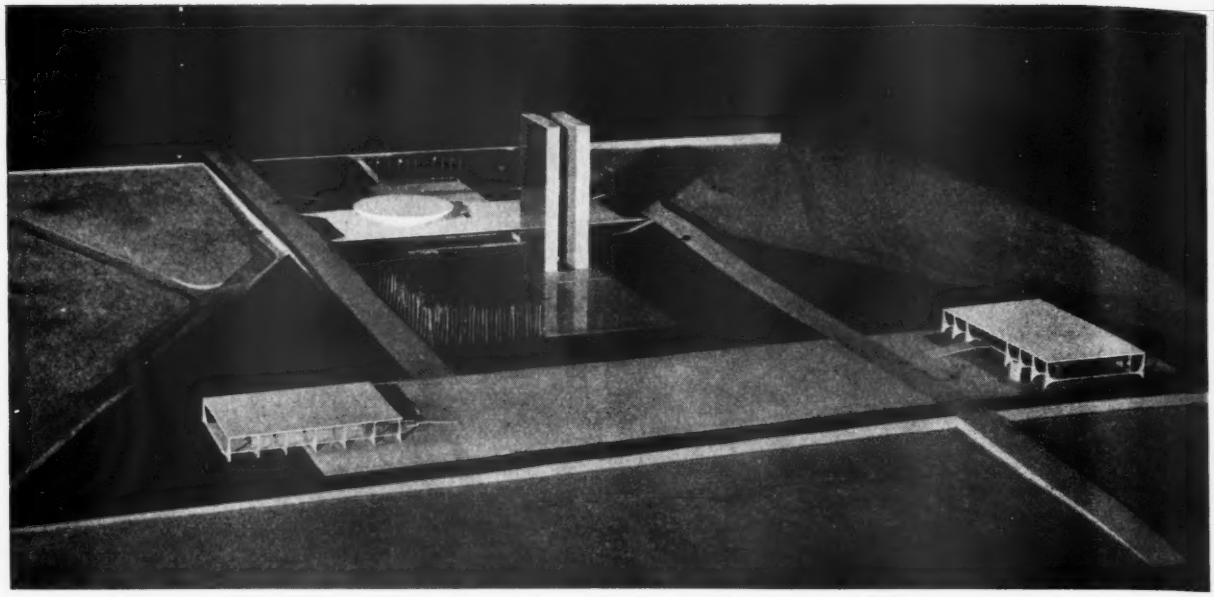
There is the same sense of direction in Oscar Niemeyer's building designs when they are judged as a continuing series. The experiments with column and roof slab and portico are by no means complete. The Alvorada Palace has broadside columns of very subtle form and finish which, from an engineering point of view, are far from perfect. In the Supreme Court the volumes are transverse and make porticos of extreme simplicity and grace. In the Planalto Palace opposite, where they are placed at right angles to those of the Supreme Court, they are more complicated structurally, and form on the valley side a most dramatic range with a magnificent sense of scale. The engineering and the aesthetic functions of column and slab have come very close in this building. And for the Cathedral the curved ribs are everything. There is no slab; only a great free space sheathed in plain refracting glass.

But while design after fertile design rings the changes on this plastic theme, the theme itself—like the Greek Doric column before it—has become a symbol. The ordinary Brazilian can accept it, and can identify it with his new capital. Meanwhile, as Brasilia grows, Oscar Niemeyer and Joaquim Cardozo and their associates are striving for higher standards all the time. This seems to me the real achievement of Brasilia up to now, that it has taken the initiative.

VOTE OF THANKS

The President: For that most thrilling talk and for those beautiful photographs it is my pleasure to call on Senhor Castello-Branco, Chargé d'Affaires, Brazilian Embassy, to move the Vote of Thanks to Sir William Holford.

Senhor Castello-Branco: I am sure I express the views of all of us present to-night when I say that it was indeed a brilliant lecture, and we Brazilians are very grateful to Sir William Holford for the deep interest that he has shown in Brasilia right from the start, ever since the day at the beginning of 1957 when he went to my country to take part in the work of the



Above: Oscar Niemeyer's model of the Place of the Three Powers. The Supreme Court on the left, the Parliament Houses and Secretariat towers in the centre (with the grove of palm trees in honour of Le Corbusier), and the Palace of the Planalto (or Executive Office of the President) on the right

Below: The dome of the Senate House, the inclined planes leading to the public terrace over the Houses of Parliament, and the twin towers of the Secretariat, under construction, 1959

adjudicating committee which chose the plans for the new capital. We are also very grateful to him for giving so much of his time to making better known in this country our great project to build Brasilia.

It is a great pleasure to me to move a Vote of Thanks to Sir William Holford for his most interesting and illuminating talk.

The President: It is now my pleasure to call upon Sir Miles Clifford, Director of the Leverhulme Trust Fund, to second the Vote of Thanks to Sir William Holford.

Sir Miles Clifford: I am not really clear as to the reason why the honour to second the Vote of Thanks has fallen upon me. However, there are a number of reasons why I am very pleased that this great honour has been conferred upon me.

The first is one which my wife will share, that we do know this fascinating country about which Sir William Holford has been talking. It is something more than just a lecture and some wonderful transparencies to us; it is something real. We have been associated from time to time, for many years, with this very beautiful country, and I have been thrilled to hear about this particular adventure.

The second reason is that Sir William Holford is the chairman of one of the sub-committees of the Leverhulme Trust which it is my great privilege to direct.

The third reason is that the Trust itself is associated very closely with the great Liverpool University where, as you all know, the question of architecture is exceedingly prominent and where Lord Leverhulme, the founder of the Leverhulme Trust, founded the Chair of Architecture and Town Planning. Sir William is one of several great men who have come from this University.

The fourth reason gives me particular pleasure. A little while ago, before I went

to Africa, Sir William and I had lunch together, and we talked about this wonderful plan of Brasilia. He suggested to me that it would be a good thing if the Trust could assist in enabling one or two British architects to go out and see for themselves what is being done. That seemed to me a most excellent suggestion, and I hurried home with it, like a dog with a rabbit, to my trustees. I am very happy to tell you that this morning I received confirmation from them that they endorsed this idea in principle most warmly.*

By any standards whatsoever this adventure of Brasilia is one of the most inspiring and greatest of this or of any other age, and it does give me, speaking on behalf of the trustees, a very peculiar satisfaction to think it may be possible that one or two British architects will be able to see what is happening on the ground.

I have great pleasure in seconding the Vote of Thanks to Sir William Holford for a most inspiring lecture.

DISCUSSION

Mr. P. L. Joseph [*A*]: Could Sir William tell us how much it has cost so far to build what is there already? And how much it is going to cost to build the complete town?

Mr. Percy Johnson-Marshall [*A*]: May I express my admiration not only for this lecture but also for the astonishing achievement of the Brazilian architects and planners?

It was my very good fortune just after the war to be one of the first British architects to visit Brazil. Then the whole idea was just hatching, and the whole movement was really being fertilised in Brazil in a most extraordinary way. Here, after only eleven years, one sees the fulfilment of the architectural genius which I think one must admire in a very big way.

Brazil is one of the very great countries today and will be an even greater country tomorrow, with whom we hope this country will have very close co-operation in many spheres. May one hope that this particular lecture and this astonishing achievement will really draw us much closer together? I hope that not only one or two of our architects but very many will go out and really enjoy what Sir William has had the privilege of telling us so well this evening.

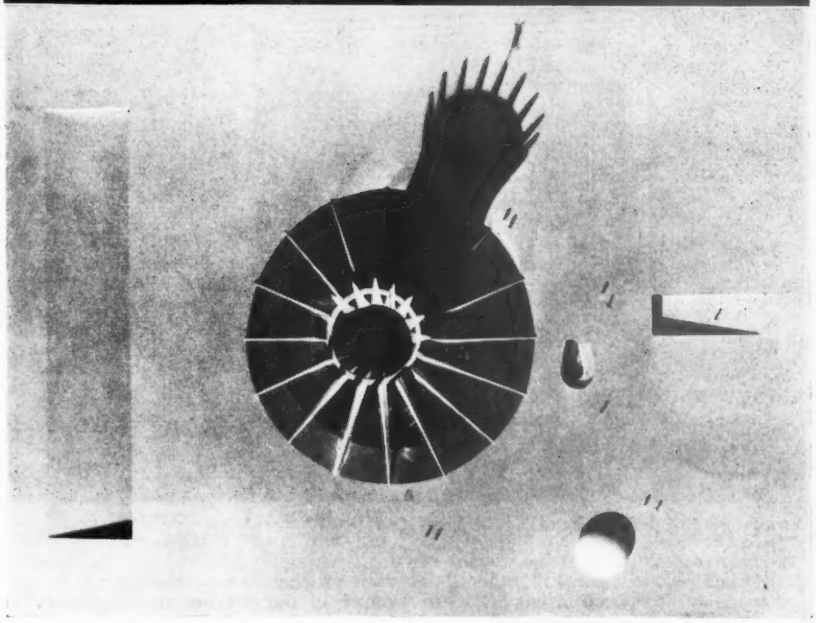
Mr. Christopher Keen: You say this has been built in three years, but having regard to the workmanship for how long do you think the finishes will last?

Mr. Max Lock [*F*]: Sir William has really given us a most illuminating talk on not only the architecture but the sociological aspects of this great city.

I would like to know what industry is being provided not only in Brasilia itself but in the region as a whole. Has it been thought out in advance?

I had the privilege of meeting Niemeyer, and I asked him how much his palace cost.

* See page 182



Niemeyer's model for the Cathedral showing the tinted glass between and on top of the sixteen colossal curved beams of reinforced concrete. The small baptistery is in the foreground; the entrance and car park and service structures are all below terrace level. The lower photograph shows the same model from above. The ramped entrance for cars is shown diagrammatically on the left. The Cathedral and its surrounding platform are now under construction
(*These photographs and the cover picture are from Mr. Max Lock's collection*)

He shrugged his shoulders, as I would like to be able to do, and said, 'I do not know. How should I know?' Therefore I would like to ask Sir William this question. What does he think would happen if Niemeyer were to be in charge of the Architect's Department of the London County Council?

Mr. A. W. Varcoe [*A*]: I have had the good fortune to live in Brazil for two years and to put up a project there, and having lived close to São Paulo is there any possibility at all of land speculation on the scale that took place around São Paulo?

Dr. Helen Rosenau: It is very, very encouraging, I think, to have seen these wonderful slides, bearing in mind that the plan for Brasilia in fact was chosen, having been open for competition, by a jury in a period when one sometimes hears that not all competitions are so successful. When juries are perhaps very enlightened it does underline the fact that this very old method of getting achievements, which one

Low-cost housing designed by Oscar Niemeyer

already had in the 17th, 18th and 19th centuries, can be revived in this continent as well as overseas.

Sir John Fortune: I would like to ask if Sir William would amplify a little further a matter he briefly mentioned, the regional implications of the new town of Brasilia. Mr. Max Lock did mention the problem of industry and work-places for some of the inhabitants of the new city. But what is going to be the overall effect on the country of Brazil and the re-siting of the capital? Might there not be some opportunity to found further new towns in addition to Brasilia, or does not the structure of Brazil stand up to such a solution as this?

Mr. William Allen [*A*]: No reference has been made to the main air services, apart from helicopters. I would be interested to know what sort of air services are intended, and whether communication from the centre of the city out to the airport by helicopter is intended.

Mr. Wolf: I would like to know whether Sir William thinks any of the experience applied in Brasilia can be used in some projects, however modest, in this country.

Mr. L. Hugh Wilson [*A*]: I would like to raise three points of many which come to mind on this wonderful talk.

First of all, to what extent is the separation of the pedestrians and footways applied to the whole town plan? We can see it very clearly in the centre and on what one might call the central area, but does that apply to the whole town?

Secondly, can Sir William tell us anything about the actual machinery for building this town so quickly? Do they bother about tenders? How do they get the jobs?

Thirdly, what are the social problems which arise from bringing 92,000 people into a completely new area in about eighteen months?

Sir William Holford: I propose to take the questions in order, and some I think go quite well together.

In the first place, both Mr. Joseph and Mr. Varcoe asked about costs and about land speculation. Nobody knows, least of all I think the New Town Corporation, what this new town has cost. When I asked Dr. Pinheiro, the President of Novacap, whether he was bothered by accountants over capital expenditure, or by capital accounts committees and things of that kind, he said, 'No, no, no.' I said, 'Do tell me the secret. How is it that you survive?' He said, 'It is quite simple. We have fixed a D-Day—21 April 1960. The town must be ready then. I have said to Parliament, "If you criticise me, you do not get your town."'

But there is a serious side to this. I cannot attempt to answer for it; but it is quite clear that Brazil, whose economy is in a state of very considerable inflation, looks on this new town in two ways. It is of course costly to get materials and pay the labour and so on, but it is also an enormous source of employment for people who otherwise would have to have something provided for them in the way of welfare services. There is also, of course, a source of wealth in the disposal of some of the land.

That brings me to Mr. Varcoe's question, because the whole of the land is in fact in Federal hands. It is disposed of in different ways. The peninsulas are in fact being sold for housing lots, and the value of this land has moved up in a way that makes the old City of London look like a tortoise. There must have been a good deal of return on the land which was sold. The other land is only leased, and in fact even the sales of that private land are subject to recall leases at a very long period. Some land is given to foreign countries, for example for chancelleries and embassies, on condition that buildings of a certain kind and value are built within a certain period of years. There is a deed of gift of that land to the foreign countries. In that relation I would like to mention that I hope very much that, when we do build the British Embassy at Brasilia, it will at least be as interesting as the ones which the United States, France and several other countries are clearly about to build. I do not know if I dare suggest, in Dr. Rosenau's words, that it should be the subject of competition, but at any rate I think we will be very much on exhibition. We have an excellent site; it is, I hope, by now being covered with some topsoil from the lake; and we shall be able to have at any rate, if not a building in the next two or three years, a bit of vegetation, which is a good start. I hope that the building, when it does come, will be absolutely first-class.

The other land in Brasilia is all rented, and as I do not know the terms I really

cannot answer Mr. Joseph's question, I am afraid; but I think that when the sort of final profit and loss account is totted up there is one feature which will make Brasilia quite different from our own new towns. Because of the short construction period the return will come in much more quickly.

That is not so true of the roads; these are being planned well in advance of the town. We found it very difficult in our new towns here to lay out a road without any houses on either side of it, because the cost of the road could not be justified by the return from riparian development. But in Brasilia they have not worried about this. They have laid out their road surfaces well in advance of development. Nevertheless, that development is so fast that, in fact, the loss on the enormous capital investment is not quite as great as it might have been.

Sir John Fortune and Mr. Max Lock both asked what the future of the region is going to be. This is a subject on which I have in fact left a report with the government because it worries me a good deal. I think that Lucio Costa would agree that some of the satellite towns—six, seven, eight miles out of the capital—will in fact be industrial towns. The capital itself, however, will not be industrial. In the middle of the 20th century it is quite possible for large communities to build purely administrative cities where employment, as we know in London, to a very high degree is in the service industries, in administration, and for black-coated workers. I think the industry which is most essential to Brasilia is service industry. Certainly they have one of the biggest hydro-electric schemes in the whole of Brazil very close, and I imagine that they will not try to bring, as we have done at Harwell, heavy manufacturing industry into Brasilia, unless in the very long run the problem of space becomes so great that they have to do it.

Whether there will be other big towns I very much doubt. There will obviously be provincial towns growing up. Chandigarh is going to increase. Belo Horizonte, which was the capital of Minas Gerais and which in 1893 was a small village, now has 400,000 people. Thus towns do grow fast in this vast continent.

I believe the road from Belem to Porto Alegre, which passes close by Brasilia, will itself act, so to speak, as a development road in the sense that large areas, partly unexplored and certainly unexploited, are now in fact being explored and exploited. They will tag on to the national road system, and I suggest that the region will have to be studied pretty intensively in the next few years, before the problem of immigration into and emigration from Brasilia becomes too serious.

Mr. William Allen asked about air services. There are three airports. The big airport, which was simply a strip of earth when I first landed there in 1957, now has in fact up to fifty planes a day in and out. There are small airports for private flying, and also a military one. There is absolutely no doubt whatever that the helicopter will be extremely frequent. I think that the ability to land direct from the airport on to the piazza or one of the ministries, quite apart from the hotels, will prove too great a temptation to the Brazilians, and I suspect that helicopters will be as common as taxis within ten years.

Mr. Christopher Keen asked about finishes. You must not be deluded by the rough appearance of some of the buildings at the moment. I was astonished to find how cleverly, with almost Italian finesse, the covering of natural marble and stone was applied to the concrete structures. Most of the public buildings are in fact covered with mosaic or marble in quite small pieces, perhaps about 9 inches square, and I think the paving also is going to be remarkably fine. In the housing areas they are able to plaster and paint in a way which is the envy of any architect in this country. They have no changes of temperature worth speaking of; no frost; they do not bother about expansion joints; and they never seem to get cracks. Even if cheap finishes are used I imagine they will last as long as anything else in Brazil; because they do not care very much about maintenance. When a job is finished they just forget all about it. Even if it falls down it is not the architect's fault! You will be glad to hear it is an act of God.

Mr. Hugh Wilson asked some rather difficult questions which I am sure he will excuse me from answering fully; but with regard to the extent of the pedestrian-footway separation, I think I can say that there is separation wherever the traffic is thick enough to warrant it. When you get out into sparser areas the roads are simply connected in the ordinary way at level. One thing they do everywhere is to leave sufficient width for fly-overs or underpasses which may have to come. I thought the road planning in Brasilia was one of the most intelligent things I had seen anywhere in the world, except perhaps in Germany.

With regard to the machinery for building a town of this kind I am afraid that is a question which I cannot answer. I would only like to comment that as there are no committees, you do not have an enormous amount of delay in getting approval for what is to be done. There is a direct chain of responsibility, from the President to Dr. Israel Pinheiro—the head of the New Town Corporation—and from him to Costa, and Niemeyer and the engineer Cardoso. That responsibility is absolutely direct. They are responsible for the planning and the carrying out of the executive programme.

I do not know about the others, but Niemeyer himself is not paid percentage fees. He lives on the site; he has a large office; and if he wants a helicopter to go and look at anything he gets it. He does not make a private fortune out of acting as chief architect to the new town. So you see how difficult it is to calculate costs in a way comparable with our own experience.

As to what would happen, as Mr. Lock suggested, if Niemeyer were changed into the Architect of the London County Council, I tremble to think; and what would happen to the L.C.C. if it got such an exciting Oscar, I do not know!

Finally, as regards the social problems of 92,000 people being moved, this has its dark and its bright sides. I found in Brasilia one great emotional element which permeated all the others, and gave everyone a gay temperament, and that was the element of hope. It is quite clear that many of the surrounding people are living in a very primitive and extremely poor state, and to them Brasilia is heaven. There is no difficulty whatever about that sort of stratum. The people who are difficult are the shopkeepers and others who are coming from other towns, but they seem surprisingly easy to move. The humbler civil servants are absolutely delighted because, for the first time in their lives, they will be able to afford the rents which they will have to pay. In Rio it is almost impossible to get any housing at all, except at great distances from the centre of Rio, and then with the serious difficulty of getting in and out. Traffic in Rio is really a formidable affair, worse than in London; so that from the government servant's point of view the change is for the better. As I said at the beginning, the difficulty is not going to be to induce people to go, but to cope with the numbers which are so rapidly moving in.

Picture postcard of Brasilia at night showing shift work in progress in two adjacent residential 'squares' or superblocks

A survey of the architects' departments of local authorities

This article brings together information about architects working in public service, mainly in local government. It is a presentation of facts rather than an interpretative study. The latter will follow as soon as the statistical data about architects' offices now becoming available have been analysed in detail and focused on specific economic aspects of the profession's work.

THE NUMBER of R.I.B.A. members employed in public service probably reached a peak around 1955–56, totalling about 6,000, but after that time there was a decline in numbers and a swing towards private practice. More than two-thirds of the members in public service were employed by local authorities.

The architects' departments of local authorities, covering virtually all the counties of England and Wales and 46 out of 82 county boroughs, the new towns, and a small number of municipal and metropolitan boroughs, were responsible for the design and certification of an annual average of about £120 millions of new building work in England and Wales in the three years 1955, 1956 and 1957. The comparable figure for new work for local authorities designed and certified by private architects was of the order of £110 millions.[1]

Information about the architect working for local authorities has been obtained from several different inquiries—the R.I.B.A.'s membership survey of 1957, the sample survey of members carried out in 1958 in conjunction with the Royal Commission on Doctors' and Dentists' Remuneration and inquiries made of the local authority architects' departments themselves in 1959 in collaboration with the County Architects' Society and the City and Borough Architects' Society. The response to all these inquiries was in no case complete, but the partial information that each has provided, taken in conjunction with earlier inquiries (the R.I.B.A.'s membership survey of 1949 and the ARCHITECTS' JOURNAL sample inquiry of registered architects in 1952) makes it possible to estimate the trend in employment of architects in public service as against private practice since the war, and throws light on the present size of individual architects' departments in local authorities and volume of work handled by them.

Table 1 shows for the four years 1949, 1952, 1955 and 1957 the proportion of architects working in different fields of architectural employment (see also Figure 1).

Three of these inquiries show a surprisingly constant spread of architects between the main occupation groups, with public service taking about two-fifths of the total in architectural employment and local government about 28 per cent in 1949, 1952 and 1957. The exception is the 1955 inquiry, which showed a much higher proportion of R.I.B.A. members in public service (45 per cent), nearly as great as the proportion in private practice (47 per cent).

To some extent this reflects a swing away from private practice in the early 1950's, with its poor prospects at that time allied with the low demand for private building work, as against the rising trend of investment in public housing and education, which drew more architects into the local authority field. The end of building licensing in 1954 and the stimulation given to private building started a reversal of this trend which is reflected in the swing back to private practice between 1955 and 1957.

However, there is one other significant factor in the inquiry relating to 1955 which is likely to have sharpened the difference compared with the years on either side. In this inquiry architects were required to give details of their earnings in 1955–56, showing separately earnings from salaried employment and earnings from part-time private practice and they were classified by occupation according to their major source of income. Replies from about 9 per cent of those R.I.B.A. members who were in salaried employment either in private practice or public service showed that they received income from part-time private practice on their own account to supplement their salary. It is possible that some architects in this situation at the time the other inquiries were made, who may have been on the verge of moving into full-time private practice, gave their employment as 'principal in private practice' in these inquiries. If this were the case, it could mean that the proportions in private practice were slightly overstated in the years other than 1955.

[1] For a survey of private architectural practice, see the JOURNAL for April and June 1959—reprints available on request.

Movement of architects between private practice and public offices

The suggestion that there was a swing back to private practice is supported by the results of the sample survey of 1958, in which architects were asked to say if they had moved into or out of private practice between January 1953 and January 1958. (The date of 1953 was chosen to follow on from the ARCHITECTS' JOURNAL survey which examined the position from 1938 to the beginning of 1953.) Table 2 summarises the answers. It shows that there was considerable movement between private practice and public offices in both directions over the period, affecting at least one architect in six, mainly those under 40. The answers given almost certainly understate the total number of moves, as people moving more than once during the period were asked only to give their comparative positions at the two end-dates, and to ignore any intermediate moves.

For architects under 35 the number of moves were fairly evenly divided between public and private practice. In the 35–39 age group, the move out of a public office into a private practice showed a marked predominance. Overall, during the period private practice showed a net gain over employment in a public office or other field.

Estimated employment of R.I.B.A. corporate members in the United Kingdom

Figure 2 illustrates an attempt to convert the proportions in different fields of employment in Table 1 into actual numbers of R.I.B.A. corporate members (i.e. chartered architects). The figures are obtained by applying the partial results of the four surveys already mentioned to the estimated total of R.I.B.A. members in the United Kingdom in each of the four years. The results can

Table 1. Proportion of architects in different fields of architectural employment

	1949 (*a*)	1952 (*b*)	1955 (*c*)	1957 (*d*)
	%	%	%	%
Private practice	51	54	47	52
Public service	39	39	45	38
of which				
central government ..	10	} 11	8	6
national boards	2		5	4
local government (incl. new towns)	27	28	32	28
Teaching	3	1	1	3
Commercial/industrial undertakings and other architectural employment	7	6	7	7
	100	100	100	100

(*a*) R.I.B.A. inquiry of 1949 to all members, with a 63 per cent response rate for corporate members.
(*b*) 3 per cent sample survey of registered architects made by the ARCHITECTS' JOURNAL in 1953, with an 83 per cent response rate.
(*c*) 20 per cent sample survey of R.I.B.A. corporate members in 1958 (taken in conjunction with the Royal Commission on Doctors' and Dentists' Remuneration), with a 75 per cent response rate. Only architects who were practising in 1955–56 were included in the results, and their employment in that year only was given.
(*d*) R.I.B.A. inquiry of 1957 to all members, with a 47 per cent response rate for corporate members.

Table 2. **Architects who moved into or out of private practice between January 1953 and January 1958** (sample inquiry only)

	Age							
	under 25	25–29	30–34	35–39	40–44	45–49	50 and over	All ages
Moved out of private practice into a public office ..	4	51	36	10	10	4	3	118
Moved out of private practice into other employment ..	—	10	12	8	1	2	—	33
Moved into private practice from a public office ..	1	50	38	29	8	4	6	136
Moved into private practice from other employment ..	2	19	11	4	4	1	4	45
Total number of moves	7	130	97	51	23	11	13	332
Number in age group	19	352	375	280	297	265	367	1,955
Number of moves as a proportion of the number in the age group	1 in 3	1 in 3	1 in 4	1 in 6	1 in 13	1 in 25	1 in 28	1 in 6

be used only to illustrate what the broad trend in numbers in each occupation group would have been if (*a*) the occupations of those members who replied to the various R.I.B.A. questionnaires were representative of R.I.B.A. membership as a whole, and (*b*) the picture given by the ARCHITECTS' JOURNAL survey of registered architects in 1952 reflected also what was happening to R.I.B.A. members at that time.

This calculation suggests that the number of members in public service was about 4,000 in 1949 and 1952, rose substantially to nearly 6,000 in 1955 and then declined to about 5,300 in 1957. The number in local government rose from about 2,700 in 1949 to 2,900 in 1952 and 4,200 in 1955, but then fell slightly to 3,900 in 1957. (No comment is made here on the trends in private practice. These will be covered in a later article dealing with the results of the income survey, when the growth in number of salaried assistants in private practice will be commented on.)

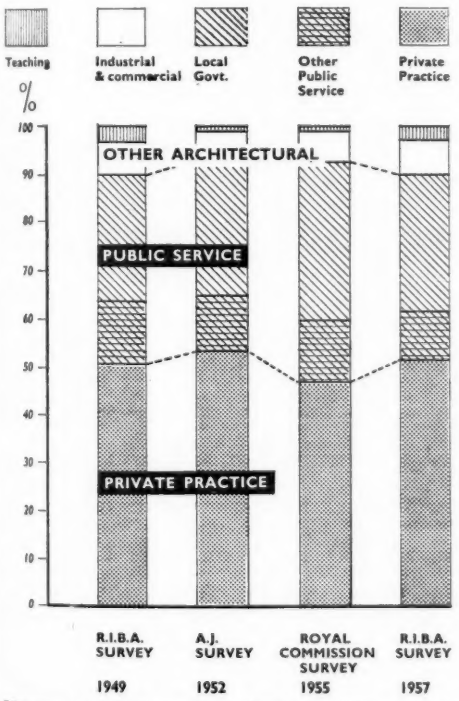


Figure 1. Proportion of architects in different fields of architectural employment

Architects' departments of local authorities

There has been a steady growth in the number of local authorities with independent architects' departments from the beginning of the century, until now 61 out of 62 counties in England and Wales (the exception being the Soke of Peterborough) and 46 out of 82 county boroughs have their own architects' departments under the control of a chief architect of chief officer status, as well as a small number of municipal and metropolitan boroughs.

Details of staff in 1958 and the value of different kinds of building work certified in the three years 1955–56–57 (to correspond with the similar inquiry made of private architects) were requested from the County Architects' Society (to which all County Architects belong) and the City and Borough Architects' Society. Returns were received from 60 architects' departments of the counties, all but two of the members of the County Architects' Society (two returns were received from Norfolk, which has a County Education Architect as well as a County Architect). Returns of staff and work certified were available for only 43 of the 68 members of the City and Borough Architects' Society, so that the figures for this group are far from complete. They cover the architects' departments of 28 county boroughs, 7

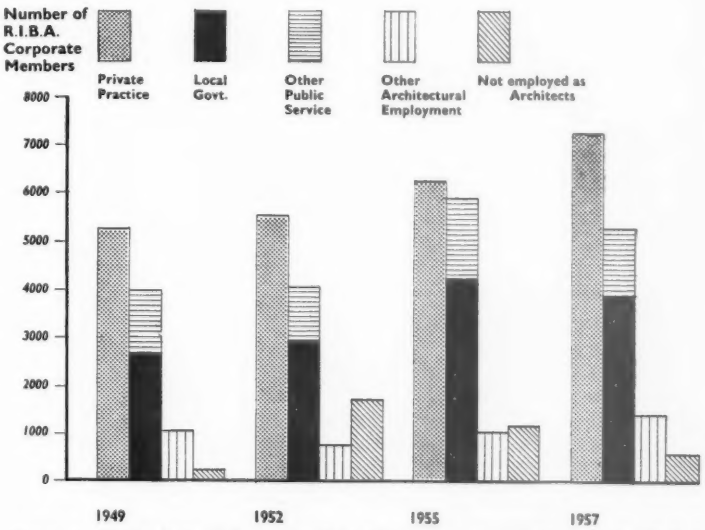


Figure 2. Estimated employment of R.I.B.A. corporate members in the United Kingdom

Table 3. Local authority architects' departments that made returns: Summary of staff and work certified

	Counties	Cities and Boroughs
Number of departments covered ..	60	43
Staff of all kinds: total in 1959 ..	7,476	3,487
Architectural staff: total in 1959 ..	2,535	1,230
of which approx. number qualified (Grade III/Special and above) ..	1,686	773
of which approx. number unqualified	849	457
Average annual value of work certified in 1955–56–57		
(i) new work	£52 millions	£50 millions
(ii) all work, including repairs and maintenance	£64 millions	£54 millions

municipal and 5 metropolitan boroughs, and 3 new town development corporations.

County architects' departments

The 60 County Architects covered were responsible for a total staff of nearly 7,500 in 1958, of whom 2,535 or one-third, were architectural staff (see Table 3). Engineering staff, land surveyors, quantity surveyors and accounts staff, building inspectors and clerical staff made up the remaining two-thirds. The size of each department was thus considerably larger than that indicated by the numbers of architectural staff, and the responsibilities of the chief architect correspondingly greater.

The approximate number of professionally qualified architectural staff (taken as staff at A.P.T. Grade III/Special Grade and above) was 1,686 compared with 849 in lower grades. The overall ratio of qualified to unqualified architectural staff was therefore 2 : 1. This compares with a ratio of 1·3 : 1 for private practice as a whole in 1958, a ratio which applied also to the larger private firms with more than 10 architectural staff. The ratios varied with individual departments however. At one extreme there was a ratio of qualified to unqualified of 16 : 1, while at the other there were 7 departments with more unqualified than qualified staff.

The average annual value of new work designed and certified within the county departments in the three years 1955–56–57 was £52 millions, of which £32 millions or over 60 per cent was of educational buildings (see Table 4). Housing, mainly for police, fire and similar services, amounted to £14 millions or over a quarter of the total. A substantial volume of repair and maintenance work, averaging nearly £12 millions a year, was also carried out within the departments, bringing the total certified to £64 millions a year on average.

The 'average' size of a department in terms of architectural staff was 42, of whom 28 were qualified. However, the inclusion of the L.C.C. Architect's Department had a considerable influence on the 'average'; without that, it would have been in the lower half of the 30's. Thirty-two, or more than half of the departments had between 11 and 30 architectural staff, and there was a small number with fewer than 11 staff. Thirteen or one-fifth had an architectural staff of over 50.

City and borough architects' departments

The 43 departments for which full returns of staff and work certified were received employed a total staff of 3,487 in 1958, 1,230 or 35 per cent of whom were architectural staff. The number of qualified architectural staff (staff at A.P.T. Grade III/Special Grade and above) was 773, compared with 457 in the lower grades. The overall ratio of qualified to unqualified architectural staff was 1·6 : 1, i.e. a slightly lower proportion of qualified staff than in the County Architects' departments, although still above the average for private practice. Few departments had a very high ratio of qualified to unqualified, the highest being 5 : 1; six departments had more unqualified than qualified architectural staff.

The average annual value of new work designed and certified within the departments in the three years 1955–56–57 was over £50 millions, of which housing accounted for £39 millions, or more than three-quarters of the total (see Table 4). Educational building accounted for a further £8 millions, or 15 per cent of the total; the remainder consisted of miscellaneous public buildings, clinics, swimming baths, markets, etc. The volume of repair and maintenance work carried out by the departments was relatively less than that carried out by the counties, averaging less than £4 millions a year, bringing the total certified to £54 millions a year on the average.

Like the counties, half of the departments had an architectural staff of between 11 and 30. There were proportionately fewer large departments with an architectural staff of more than 50—only 6 or 15 per cent of the total, and more small departments with staffs of less than 11 (7 or 17 per cent of the total). The 'average' department had an architectural staff of 29, of whom 18 were qualified.

Local authority work designed by private architects

Private architects designed 21 per cent, just over one-fifth, of the total value of new building work of the counties with their own architects' departments, in the three years 1955–56–57; the corresponding figure for the cities and boroughs included in the survey was 11 per cent. Most of this work was certified as well as designed by the private architect, but a small proportion, mainly educational buildings, was certified by the local authority architects' departments.

These proportions do not, of course, represent the total share of private architects in the design of work for local authorities, as many authorities not covered in the survey use private architects. In fact, architects in private practice accounted for nearly as large a share of new work for public authorities as that of the

Table 4. Building work designed and certified by those Architects' Departments of Local Authorities in England and Wales that made returns

(annual average for 1955–56–57)

Type of building	County Architects' Departments		City and Borough Architects' Departments	
	value of work certified	as a proportion of the total	value of work certified	as a proportion of the total
	£ millions	per cent	£ millions	per cent
New work (including extensions and major alterations of existing buildings other than houses and flats)				
Housing, single and two-storey	5·2	*8·0*	20·9	*38·7*
multi-storey	—	–	7·1	*13·1*
mixed	8·8	*13·8*	11·0	*20·3*
Housing, *total*	14·0	*21·8*	39·0	*72·1*
Schools and colleges ..	31·9	*49·7*	7·8	*14·4*
Health service buildings (clinics, health centres, ambulance stations, etc.)	0·7	*1·1*	0·1	*0·2*
Police stations (including 'beat' houses)	2·0	*3·2*	–	–
Fire service buildings ..	0·7	*1·0*	–	–
Industrial and commercial buildings (factories, markets, etc.)	0·1	*0·2*	1·1	*2·0*
Welfare homes (old people, blind persons and children's)	1·3	*2·0*	2·4	*4·3*
Other public buildings ..	1·5	*2·3*		
TOTAL, NEW WORK ..	52·2	*81·3*	50·3	*93·0*
Repair and maintenance				
Houses and flats (including minor improvements) ..	1·2	*1·9*	1·8	*3·2*
Other	10·8	*16·8*	2·0	*3·8*
TOTAL, ALL WORK ..	64·2	*100·0*	54·1	*100·0*

Table 5. Estimated proportion of new building work for public authorities that was certified by (i) architects' departments of local authorities and (ii) architects in private practice

(Annual average for 1955–56–57 of work in England and Wales only)

Kind of building work	Estimated total value of work done for public authorities	Work designed and certified by architects' departments of local authorities (*b*)		Work for public authorities designed and certified by private architects (*a*)		Total of public work certified by (i) local authority architects' departments, and (ii) architects in private practice (col. (2) + col. (4))	
		estimated value	as a proportion of col. (1)	estimated value	as a proportion of col. (1)	estimated value	as a proportion of col. (1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	£ million	£ million	per cent	£ million	per cent	£ million	per cent
Housing	322	67	*21*	49	*15*	116	*36*
Non-housing							
Education	75	43	*57*	33(*a*)	*44*	76	(*101*)
Health	11	1	*9*	8	*73*	9	*82*
Other buildings for public authorities (including industrial, commercial and public utility buildings)	67	11	*17*	21	*31*	32	*48*
Total, non-housing	153	55	*36*	62	*40*	117	*76*
TOTAL, *all buildings for public authorities in England and Wales*	475	122(*b*)	*26*	111	*23*	233	*49*

Note (*a*) Including a small amount of work, mainly on educational buildings, designed by private architects but certified by local authority architects' departments, averaging £3 millions a year.

(*b*) Work done by the architects' departments of government departments or nationalised boards is not included.

local authority architects' departments. Table 5 sets out an estimate of the total value of new work for public authorities in England and Wales and, against it, the estimated totals carried out by (i) local authority architects' departments (including an estimate for those departments which failed to make a return), and (ii) architects in private practice.

This shows that about half of all new public buildings were designed and certified by architects in these two groups, the share of private practice being £111 millions or 23 per cent compared with £122 millions or 26 per cent for the local authority architects' departments. The responsibility of these two groups of architects together covered only 36 per cent of housing, but more than three-quarters of new work other than housing. Private architects were responsible for a slightly larger share of the work other than housing (40 per cent compared with 36 per cent for the local authority architects' departments) but a smaller share of the housing work (15 per cent compared with 21 per cent).

The estimates for educational buildings show slightly more than 100 per cent designed by these two groups of architects—a tribute to the zeal of the Ministry of Education in this field?—or a not unreasonable margin of error in the estimates.

Table 5 does not give a complete picture of the share of new public work handled by the architectural profession, or even of all the architects in local authority service. First, on the local authority side, it does not include the small number of architects' departments of Urban and Rural Districts (who were responsible for about 3 per cent of all local authority housing in England and Wales in the three years 1955–56–57). Nor does it include the many local authorities without an independent architect's department, where the architect is under the Borough Engineer or Surveyor. A substantial proportion of the local authority housing comes within this group. Secondly, Table 5 does not include the work of the architects in government service (Ministry of Works, the Service Departments, New Scotland Yard, etc.) or in the nationalised boards (transport, public utilities, hospitals). These would probably account for most of the 'missing' work on health buildings, industrial and other public buildings shown in the table.

Conclusion

What does all this add up to? The steadily rising trend in numbers of architects employed in public (including local government) service up to 1955 appears to have ceased, or even to have been reversed, by 1957. And since that time, the decline in public authority housing and the recent upsurge in private building plans are probably drawing greater numbers into private practice. The status of a principal or partner in (successful) private practice probably remains the ideal of most professional people, even if not always attainable. Public service may counter this, not just with the prospect of a safe job and a pension, but by offering the chance of opening up new fields of development (for example, schools in the post-war period, hospitals today) or of establishing new methods of working that give the architect greater individual responsibility and freedom to design.

The existence of these two main parts of the profession, with the high degree of mobility between them in both directions, can be beneficial to the profession as a whole. It encourages the diversification of experience and the cross-fertilisation of ideas both on design and on office and job organisation. It can also have an upward influence on the level of salaries, with the competition for staff that occurs when there are sudden increases in demand—as at present both in private practice and in certain fields of public service.

The economic relationship between these two parts of the profession offers plenty of scope for investigation. Is it true, for example, that local authority architects' departments can offer their councils a service at a cost that is below the R.I.B.A. Scale of Fees? Or that the volume of work carried out by an architect in local authority is considerably less than that of his colleague in private practice? Does a bigger office achieve a greater volume of work per architect than the small office and how do local authorities with their higher proportion of qualified staff compare with private practice in this respect? A few facts on their own can be dangerous—and it is for this reason that figures have not been given in this article of the volume of work certified per architect in the city and county architects' departments compared with private practice. There are big differences, but we want to know more about what they signify before publishing them. So far we are conscious of having produced no more than a sketch plan of the outlines of the architect's share of the country's building work. Each stage of investigation discloses the immense fields of research that lie underneath, problems about which there is a wide range of opinion but very little fact.

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Current and Future Developments in Farm Buildings

by D. S. Soutar, A.A.Dipl. [*A*]

AGRICULTURAL output is some 60 per cent greater today than it was pre-war, an increase achieved through the adoption of new techniques in crop and animal husbandry, management practices and the use of greatly improved mechanical equipment.

Buildings inevitably involve a relatively long-term capital investment compared to other sections of the farm wherein capital investment gives more obvious and more readily assessable increased returns. Farmers have been willing to spend money extensively on field equipment because the benefits are immediate and for his investment the farmer obtains a ready-made answer to his requirement, a machine precisely designed for the work required of it. The output per man-hour in field production has increased tremendously and it is entirely wrong that we should tolerate the dissipation in the steading of the efficiency in production gained in the field.

Between 40 and 70 per cent of all work on the farm takes place in and around the farm buildings, many of which today are a hindrance rather than a help. Far too often they have been accepted as an unalterable asset or liability, for better or for worse, whereas they should be considered in the same light as any other form of farm equipment—as agents to its increased efficiency, adaptable to agriculture's ever-changing requirements.

The Agricultural Scene

With the exception of Sweden, where the drift from the land is not frowned upon and where co-operative 'cow pools' and other amalgamations are encouraged, the official attitude in western Europe is to bolster up the family farm. America, in direct contrast, looks upon contract farming and vertical integration as one of the most potent forces in its agriculture today. 'Vertical integration' involves the sharing by the farmer of some of his managerial decisions and risks in production and marketing with one or more related businesses—his supplier, processor or distributor. Integration may involve only one crop or kind of livestock or it may cover the entire output of the farm. In this country Mr. Geoffrey Sykes supports the American approach and suggests that 'agriculture' is going to be changed to 'agribusiness' and that in an age of increasing efficiency the country cannot afford the present set-up. . . . Vast sums of capital would be needed in farming because of technical advances. . . . If farming failed to put its house in order in the business sense the financiers would move in and buy the technical know-how and take over.

In my opinion we shall see great technical advances and increased specialisation, vertical integration (already more widely practised than realised on first consideration) will be expanded, the larger farms will continue to swallow up the smaller units and while the inefficient small producer will 'go to the wall' there will continue to be a large number of capable small farmers who will make a worth-while living.

The Designer's Problem

The farm building designer is to be faced with a task no less comprehensive in scope and much more specialised in detail than at present. More than ever will he have to keep abreast of agricultural developments and their implications as to future trends. By bold but judicious alterations and additions based on long-term development plans the designer will provide the farmer with an efficient 'processing centre'. With the continuing advance of scientific and technical developments the adaptation of farm buildings will be a continuing process. Where construction for flexibility-in-use is of a high order the necessary structural alterations to accommodate changing uses may be relatively limited.

Unfortunately, the rationalisation of our farm buildings will become increasingly difficult because the unenlightened farmer will be continually making haphazard additions to his already outmoded building.

Planning the Steading

Many farmers in their desire to avail themselves of the benefits of the Farm Improvement Scheme have rushed to erect some particular building or to alter some section of their steading for a particular use when their efforts would have been far more effective if they had adopted a much wider conception. Only by considering the steading as a whole in relation to the farming enterprise can real and lasting progress be made. As a first essential every farmer should have a considered long-term agricultural policy as his farm buildings must be designed to serve such policy. He must also have a plan of his buildings and their surroundings, preferably to 'eighth' scale, as this will form the key to efficient future development. This Steading Development Plan should hang in every farmer's living-room or office. It will show him how to achieve considerable savings at little cost, how re-allocation of building uses may answer his problems, and how all future building operations can be satisfactorily related to improve the steading as a whole.

Efficiency

Every building must be designed for maximum efficiency and the farmer must realise that anything less is a continuing brake to his production standards. While buildings should be viewed in the same light as any industrial concern, the farm steading involves far more complex, varying and ever-changing processes than those found in industry, and, to quote W. G. Benoy, 'Economy in labour in farm buildings is far more likely to be achieved in the field of planning rather than in 100 per cent mechanisation'.

While good planning must always be the basis of efficiency in the steading, internal mechanisation is being rapidly developed particularly in the storage, processing and handling of feedstuffs. In this field new methods will be developed. Stephen Hawes, writing in *Farm Buildings Association Journal* 2 (page 18), states: '. . . It is the changing of method which holds scope for enormous developments within our buildings, and when designing a building it is essential to query the method for carrying out the work within the building. . . .'

Capital Expenditure

It would suit agriculture's ever-changing requirements if building costs could be related directly to their required life, but to achieve safe structural stability a life of about 30 years is the economic minimum as we build today. However, new low-cost, shorter-life techniques are now being tested and their successful development would have far-reaching effects.

When considering any building its capital cost in relation to the return of the unit it houses will influence the degree of permissible specialisation and experimentation which can reasonably be incorporated in the design. For example, while it costs approximately £100 to house a dairy cow making £40 per annum profit, it costs only £1 10*s*. to house a hen which under good management will earn £1 per annum. The hen house, therefore, can be written off much quicker and it is also more able to carry the cost of any desired experimentation. Unlike obsolete mechanical equipment outmoded buildings cannot be towed away and dumped on the scrap-heap.

Adaptability

The adaptability factor is one of the most important in the design of farm buildings in these days of change due to progress, and this is answered most satisfactorily by wide span frame buildings with readily adaptable in-filling panels and light permanent or portable divisions. Such buildings can be readily adapted for many

forms of crop and equipment storage and animal housing. In certain circumstances there is a perfectly justifiable argument in favour of buildings of specialised design which cannot be readily adapted to alternative uses. However, it is surprising how many specialist requirements can be answered by forming specialised 'linings' within frame structures and at relatively little extra cost—a cost well repaid by the value of the adaptability factor so gained.

Economy in Maintenance

Good design and choice of materials are the key to economy and ease of maintenance. Build economically by using efficient constructional design, but never build cheaply at the expense of sound structural standards, and only use materials which require little maintenance—pressure-treated timber, preserve-treated steelwork, concrete and asbestos.

Shoddy building is not traditional to the country craftsman, but such is often forced upon him by the farmer, and while the initial outlay may be 'cheap' it is far from economical in the long run.

General Development Trends

The general trend in farmstead design is one of simplification, simplification in broad outline with intensification in detail and in concentrated units. The greatest part of the productive work on a farm involves handling materials—storing, processing, utilising, marketing and disposing of waste and, while the automation of industrial factories may never be matched because of the animal factors involved, the same basic principles are applicable. Storage areas should adjoin points of usage, man-travel in production work should be reduced to a minimum and wherever possible man-hours and man-energy should be replaced by mechanical equipment.

When improving existing steadings one may have to demolish otherwise sound structures because they are badly sited and of an unsuitable nature.

Broadly the trend is towards mass handling of both stock and materials and the extension of this principle will develop (whether we like it or not) according to the discoveries of the livestock and crop research scientists and the mechanical engineer. It is well to remember that the building of today will probably have to house the equipment of tomorrow as well as new husbandry methods.

The number of individual building units required to form any farm steading will naturally vary according to the size and nature of the farm in question, but in general principle the number of permanent divisions within those units will be very limited. While, on the small farm, the all-under-one-roof conception is often attractive, the design of specialist units within or attached to the main building will invariably lead to a limitation in the flexible development of the main building as well as limiting the expansion and freedom of design of the specialist unit. This must always be borne in mind.

The wide span, portal truss type of frame structure of 40–45-ft. span can form the basis within which the requirements of most agricultural enterprises can be supplied although design within 120-ft. span ex-government hangars has demonstrated to the fullest the flexibility such allow. Whatever the building its multi-purpose use must be borne in mind, particularly when deciding spans, the position of roof supports and wall-head heights. When endeavouring to reduce work-travel by developing the steading in one block care must be taken not to 'build oneself in' to such an extent as to unduly limit ease of access as well as future expansion.

Even on moderately-sized farms, specialist enterprises such as pig and poultry housing may best be designed and sited as independent units. This allows the designer far greater freedom in answering the particular building problems involved as well as reducing the ever-present disease-spread risk and animal stress factor as far as the stock are concerned.

Work study has already proved its value when applied to agricultural problems and Mr. Nigel Harvey's book on the subject is very well worth reading. Already a number of agricultural work study private consultants are in practice and their number will undoubtedly increase. The result of their work will appeal to the farmer in affording him immediate cash savings. On many of our farms, particularly the larger units, development has 'happened' rather than been planned. Work study can be of immense value in the simplification of the work within the buildings of such farms. It will also provide us with a number of standards which will be readily applicable to many operations within the steading.

A new concept in agriculture known as 'materials handling' will have an increasing influence on the design of nearly all farm buildings. It involves the handling of all materials on the farm by mechanical means. It has been widely publicised by the editors of America's *Successful Farming* and its study forms part of the curriculum of most American agricultural colleges. The former point out that while, in the past, the developments of gadgets has helped to ease the farmers' burdens, what is now required is an integrated engineering system—the nearest approach to automation on the farm. They suggest that the following principles should be applied to everything to be moved on the farm.

1. *Don't move it*—Or move it as little as possible. Shorten distances. Let animals self-feed.
2. *Handle larger amounts*—Make every trip count. Eliminate small batches.
3. *Make flow continuous*—Use machines to move materials automatically.
4. *Condense it*—Reduce bulk and weight of materials. Change their shape for easy handling.

In this field much can be learned from industrial developments and already it is surprising how many ways farm materials can be carried, scraped, dragged, blown, sucked and floated and many of the systems involved have a very marked effect on building design. Agricultural wages have doubled since 1946. In the same period the cost of mechanical equipment has increased to a much lesser degree and prices will tend to fall when a quantity market has developed. This should give added incentive to its installation.

On the family farm in particular certain unpleasant tasks such as dung handling may well be mechanised from an amenity point of view alone. Whatever the outcome, the age of the sack and all it involves will soon be a thing of the past.

Storage Accommodation

In view of the general post which is constantly taking place within the storage area on any farm and the never-ending variety of combinations involved the subject is difficult to categorise in brief.

Silage Pits and Silos

The development of the silo from the uncovered clamp, which is still advised by many successful farmers, to the fully enclosed building which is now so popular (especially in more northerly climes) has been very rapid, and when used for self-feeding it answers the first principle of materials handling: 'don't move it'. A covered silage pit which is to be used for self-feeding at one end and rationed feeding at the other, with hay and straw storage over, requires very careful siting to answer all the management requirements from its ease of filling to the periodic scraper-cleaning at the self-feed face. When such are answered successfully it is one of the most useful buildings on the farm. The techniques in its use are still being developed, even to housing stock on top of the silage—a truly all-purpose building. While commonly constructed with mass concrete walls, post and panel structures are eminently more flexible in use.

Tower silos, so popular in the twenties, have generally been discarded, although always held in high esteem in America and the Continent, where many large units are still being erected. However, in Yorkshire, a large-scale farmer has just erected two 200-ton American-type sealed tower silos, blower-filled and mechanically unloaded on to an automatic feeding belt which forms the core of an intensive stock system.

Hay

Recent years have seen the economic development of artificial hay-drying in an effort to counter our undependable summer weather. These developments for the most part have taken place on a relatively small scale, often taking advantage of the heater and fan of an existing grain-drying system, the hay being both loose and in bales. The labour requirement in handling the material is not inconsiderable and portable heater units such as used in Holland would improve this factor. This involves the building of the hay on its permanent storage site around a heater/fan unit which

is raised by pulley as the hay is dried and built up in successive layers. The tunnel drying of baled hay using a tractor for fan propulsion and its waste-heat as a drying agent can readily be arranged in any unoccupied building—although this involves double handling.

While the self-feeding of hay is not widely practised, due probably to the wastage involved, new designs in self-feed barriers may eliminate this drawback.

Grain Storage, Processing and Feed Mixing

One of the most prominent post-war developments in our agriculture, the wide use of the combine harvester, has resulted in radical alterations in farm grain storage, and in spite of the drawbacks of the combine harvester so far as the small farmer is concerned, the binder may soon be a museum piece. The early sack-driers, although suitable for the small farm, have been succeeded by in-bin storage and drying and, of more recent years, batch and continuous driers have been more generally adopted by the larger farms, mainly using self-emptying bins for storage purposes.

In a paper such as this not even a limited review of this equipment is possible. Technical developments are rapidly proceeding. What the small farmer still requires is a mobile unit capable of multi-purpose uses and no doubt this will be evolved. The batch drying of grain in trailers with portable fan units minimises double handling and may be developed to answer the small farmer's requirement.

Storage bins of brick, concrete, steel and timber are being employed, the two former often as part of existing structures, and while sectional bins of steel and timber allow flexibility they are usually so linked with processing equipment as to severely limit this eventuality.

The storage accommodation must not only handle the home-grown crop but also, in many cases, be able to contain bought grain for feeding. Facilities for the rapid filling of bulk tankers are essential.

The storage accommodation must be designed as an integral part of the feeding/mixing plant and the latter, by means of automatic controls, should be capable of providing any required mix of ground grains plus concentrates in storage bins, self-emptying into bulk containers or blowing to the required points of discharge. The delivery of meals in small bore pipes is being rapidly developed in America and no doubt we will soon benefit from this pioneer work.

The detail of the equipment and degree of automation will depend on the scale of the unit involved. On small farms rations may well be simplified to ease automation.

Conveyors may often be used for many purposes as a means of integrating existing building units.

Potato Storage

The advantages of indoor potato storage are now widely recognised. Storage may vary in form from a temporarily-converted implement shed, lined with straw bales to well-insulated storage buildings complete with controlled ventilation systems. This subject is fully covered in the ministry's *Fixed Equipment on the Farm* Pamphlet No. 24.

The advantages of sprouting seed potatoes, using fluorescent lighting and mechanical ventilation within well insulated buildings, is recognised by progressive growers as giving an increased crop of around 30 cwt. per acre. Many thick-walled old buildings are being economically converted for this purpose.

Implements

Modern mechanised agriculture involves the farmer in providing storage and protection from the elements for a costly range of implements varying in size from the tractor-mounted plough to the combine harvester. While one never sees implements neatly arrayed as on architect's plans most farmers now recognise the need for orderly storage which allows reasonable maintenance room. If trailers and tractor-mounted implements are to be stored daily then ample space for turning and ready access to an open-fronted shelter is essential. The combine for ever grows larger and must be served by a gable door 13 ft. high in a portal frame building or one with equivalent headroom.

The implement store, though generally of a type of building convertible for many uses, is generally best sited on its own away from the main buildings if orderly storage is to be prized—it is still available for real emergencies.

Fertilisers

While bagged artificials can often be stored in any unused building with convenient transport access, bulk handling may alter the situation and before long self-emptying storage bins offering easy access and distributor filling control from the tractor-driver's seat may soon become commonplace.

Manure

Due to the decreasing quantities of straw available for bedding purposes there is probably less farmyard manure handled on farms today in spite of increased yard housing. Apart from design aimed at the reduction of the straw requirement alternative bedding materials or no bedding at all is often the rule. In the latter case the dung and urine is collected in sludge form and distributed on the fields either by suction tank distributor or by way of a pump and portable pipe-line distribution system designed rather on the lines of the Swiss system of 'Gulle' farming. The handling of dung in sludge form naturally can have an important influence on building design, particularly floor levels. The dung may be pushed into the holding tank by manual effort, by two- or four-wheeled tractor scraper or by gravity channel as in the patented 'Sterovic' dung removal system.

Dairy Cattle Housing

The wide-scale introduction of the loose-housing system, together with the introduction of self-feed silage and refinements in milking parlour design, is one of the most notable trends in post-war farming techniques. However, many thousands of existing dairy byres of sound construction are giving a service which is too valuable to commit to wholesale demolition and their existence will no doubt continue for many years to come in spite of the much higher labour costs involved. While relatively few new byres are being erected the improvement of those already in existence deserves particular study.

We still have to develop a surface for the standing which will offer comfort and hygienic conditions to such an extent as to permit bedding to be omitted. The use of rubber matting has not proved very satisfactory. (The author has no experience of the latest foam-rubber mattress developments.) While various methods of dung removal varying from tractor-mounted scraper to belt, chain-bar and oscillating scraper bar have been developed, no satisfactory method of mechanised byre feeding has been achieved. In Vermont, U.S.A., however, a scraper-bar conveyor system of feeding both concentrates and hay has been successfully tried out and this shows a labour saving of some 80 per cent. Such internal byre mechanisation would be an uneconomical investment in small units and perhaps the most reasonable course for the small producer, handicapped by outmoded buildings, will be to join a 'cow pool', a co-operative centralisation of the milking stock of groups of small farmers who supply the feed and bedding from their individual units. This system is operated successfully in America, Sweden and to a limited extent in Denmark.

One great advantage of the loose-housing system is the reduction in the requirement of specialist buildings and this ease of adaptability has been proved over and over again in the conversions carried out in buildings of very varied nature.

The loose-housing system when first introduced involved the use of traditional yards or courts but the straw consumption involved was too extravagant and, influenced undoubtedly by the American confined-bedded-area with covered feeding stance and open yard, various developments have followed to remedy this deficit. By designing the bedded area with no troughs and no 'traffic routes' it can be reduced to an area of 40 sq. ft. per cow and this plus the reduced 'treading' of the bedding have cut down the bedding requirements to some 13–15 cwt. per annum. Even this demand strains supplies in some areas and to reduce the requirement of bedding to an absolute minimum other measures have been adopted, 'deep litter' and slatted floors. The deep litter technique usually employs sawdust, shavings and a variety of forms of local mill waste and further experience of the system is required before fair comment can be made.

Cattle have been housed on slatted floors in Iceland and Norway for a number of years, such housing employing a sub-storey or part sub-storey with full height cellar space which allows tractor use. In Sweden

and Belgium experiments with slats over the heavily treaded areas and a very confined bedded area are still under trial, the Belgian unit keeping the dung in sludge form and pumping it out to the fields via a Gulle-type irrigation system.

In this country where we lack proper research and development facilities, individual farmers are experimenting with both wooden and concrete slats set some 2-3 ft. above floor level. While it is too early to comment on developments it appears that the most feasible form of dung removal will require the mixing of the dung and the urine for sludge handling. The animals appear contented on the slats; they can be housed relatively more tightly than in normal courts and, therefore, the system deserves fullest investigation.

In order to reduce covered space to a minimum, Mr. O'Neill of Lurgan, Co. Armagh, has pioneered the housing of the cows on top of the uneaten area of the silage pit, an impermeable layer of four inches ground limestone and nine to twelve inches sawdust being used to cover the silage. This housing technique has been copied in Britain on a number of farms with reported success.

A further type of bedding-saving loose-housing unit is being developed by Col. Drew at Bigbury, South Devon, wherein the lying area is floored with rubber-covered wooden blocks (municipal surplus stock) and washed daily into a Gulle-type irrigation system. This pioneer effort is still at the trial stage.

The recently introduced zero-grazing system can be adopted with any of the above developments so long as the special facilities for summer grass deliveries to the cattle troughs are arranged.

As is the case when considering all types of farm buildings local climatic variations must be given serious consideration in designing loose-housing units, particularly when determining the siting and degree of shelter required. In no area is it advisable to leave both ends of a covered pit open for self-feeding.

While in most units the parlour feeding of concentrates is practised a contrary school of thought insists on the inclusion of yoke-tie troughs as being infinitely superior from a husbandry point of view.

Bedding is usually stored for ready use over the silage pit when such adjoins the bedded area or in a fenced-off portion of the latter.

All interested in cattle housing should read Messrs. Sturrock and Brayshaw's *Planning the Farm to Save Labour*, University of Cambridge School of Agriculture, Farm Economics Branch Report No. 47.

Calf Housing

While it has always been recognised that young calves require much greater protection than adult cattle the advent of early weaning of calves onto milk substitutes and concentrates has placed further emphasis on their particular housing requirements if maximum thriftiness is to be obtained. For this new husbandry technique the calf prospers best in a well-insulated house, preferably with fan controlled ventilation and supplementary heat, sufficient to maintain a 50° F temperature for calves up to six weeks of age and 40° F minimum up to sixteen weeks. In dairy herds the young calves may best be individually penned but for beef calves three per pen with yoke-ties for separate bucket feeding is a usual arrangement. The calves are housed on false slatted wood floors which are mucked out daily. In the second stage of rearing, from six to sixteen weeks, the calves may be run in groups of six. It is a reasonable labour economy to allow the litter to build up and be cleaned out with the removal of each batch of calves. To facilitate this portable pen, divisions are adopted to allow of mechanical mucking. The houses must be thoroughly washed down and disinfected between each batch of calves.

Beef Cattle Housing

Until very recently the housing of beef cattle has probably received less attention than any other type of farm building in this era of post-war developments. This may be partially due to the fact that in many areas where cattle are 'finished' they are the neglected and lower earning ancillaries to much more profitable arable farming. These circumstances may be partly responsible for the fact that 'labour per yarded bullock in winter has been found to vary from 5–27 hours' (G. B. Clarke of Leeds University at 1959 F.B.A. Conference). On more progressive farms, however, efforts have been made to improve matters by the partial automatic handling of the turnip crop and the self-feeding of silage and straw.

The recently increased interest in profitable beef production has resulted in a number of interesting projects all of which involve intensive housing. At Messrs. Spillar's Middle Aston research farm a simple frame structure has been equipped with a sectional central runway to allow of feeding from a tractor-drawn, side-delivery trailer, the potential baby beef animals being bedded normally on either side.

It has recently been announced that Harper Adams Agricultural College is to investigate the possible adaptation of American intensive methods to British conditions. Such methods involve the permanent indoor housing of the cattle in one of the minimum-bedding court systems and their automatic feeding with high-quality forage, grass and lucerne from adjacent tower silos. Various forms of silo unloaders are employed while the lateral transmission of the feed is by auger or scraper bar conveyor.

A unit of this type has recently been reported as nearing completion on the 700-acre farm of Mr. G. D. Rivis, Weaverthorpe, East Yorkshire. This employs two 200-ton Harvestore sealed tower silos which are blower-filled and unloaded at the bottom by a modified coal cutter with final delivery of the haylage to the troughs by belt conveyor.

A further new technique in beef production which shows great promise is now being pioneered by Dr. R. Preston of the Rowett Institute. This involves the feeding of intensively housed young cattle on an economic complete ration of ¼ hammer-milled roughage and ¾ concentrates and such would readily lend itself to automatic handling. Where sound feeding byre buildings were in existence a layout akin to that used at Connor Prairie Farms, Indiana, might be installed. This comprises a byre with the cattle in single 3-ft.-wide standings, 'heads in' and overlapping side-by-side so that the feed troughs are in one continuous line and can thus be easily filled by an overhead auger-conveyor which runs the length of the 84-ft. building. A time clock is set to give the animals five feeds per day with four 'drops' of a predetermined amount at each feed. A gain of 2½–3 lb. per day is expected. The Connor byre is equipped with an automatic gutter cleaner which delivers the manure to a spreader outside. An alternative might be some form of slatted gutter, a Sterovic sludge channel and sludge tank.

In Aberdeenshire the owner of a double standing feeding byre which had no front feeding passages has removed the interior fittings and installed front feeding passages to accommodate a self-emptying feed barrow which delivers directly into a continuous trough. There are no stall divisions, the cattle being tethered to a rail running along the edge of the trough. The central alley has no gutter and will be periodically mucked by tractor scraper. By tying the young beef cattle at 2 ft. 6 in. centres a 75 per cent increase in stocking has been achieved with a very greatly reduced labour requirement.

While this unit pales into insignificance when compared with a reported American mammoth of 50,000 head serviced by five men it represents a most economic development which was carried out entirely by farm labour at little cost.

Sheep Housing and Handling Equipment

Handling pens and shelters for sheep flocks have been used for centuries, varying from simple shelter stalls to the old stone-walled hog houses of the north of England. Sheep dipping has been carried on for over 100 years with the gradual improvement of the required equipment. Since the war, however, progress has been rapid, being inspired by labour shortages and, to no small degree, by practices developed in New Zealand and Australia. The recent increase in sheep stocks will require the construction of many new handling yards.

Fixed equipment for the sheep flock comprises handling pens with drafting races, foot baths, a wide variety of dippers, spray races, shearing sheds with overnight shelter for a day's clip of sheep, wool stores and hog shelters. The number, size and type of these items which may be carefully planned as a composite unit will depend on the type of sheep flock to be served. Some of the items can be of mutual assistance, handling pens being required by them all.

Properly planned handling pens are of immense value to the shepherd. They save time and tempers, they facilitate thorough flock inspection and lead to an all-round increase in husbandry standards including the reduction in the rough handling of the sheep. To design pens and housing through which sheep will pass with the minimum of driving requires the serious study of 'sheep psychology' and the careful siting of the pens in relation to their surroundings, the use of solid and open-sided fencing, decoys, etc. The degree to which 'automatic progress' can be achieved is quite remarkable.

The variety of pen layouts and types of dippers available are probably more numerous than any other form of fixed equipment on the farm. Where small flocks are kept the short swim bath, with all manner of dipping devices, is generally used while for large flocks the swim-through bath is becoming increasingly popular. Employing an automatic trap floor a shepherd and his dog can dip 400 sheep in an hour.

In most areas statutory regulations demand the dipping of sheep once per year. While the spraying of sheep is not yet accepted as an alternative to the dipping which must be carried out against scab, the introduction of the Cooper–Allman Sheep Spray Race in 1955 offers a means of blow-fly control which involves a minimum of labour and virtually no man-handling of the sheep.

Wool sheds, particularly those incorporating overnight flock shelter, and efficiently planned catching and shearing facilities are, in the main, a relatively recent innovation. Their design has been greatly influenced by New Zealand and Australian developments. In these the main floor is some five feet above ground level and on a slatted portion is housed part of the flock with the remainder underneath all but that slatted portion. This ensures a dry flock for the morning's clip and as the work proceeds the slatted-floored pen is continuously filled from the lower level, a covered ramp being used in wet weather. Catching pens with swing gates adjacent to the shearing boards allow the shearer to catch his own sheep, which, on being sheared, can be readily 'ejected' by small exit ports into holding pens.

The increasing cost of 'down-wintering' the ewe hogs of hill flocks has led to the increased building of hog houses. These have slatted or solid floors and can do double duty as overnight holding pens at shearing time. In constructing such houses for hogs it must be remembered that their sole purpose is to provide simple overnight shelter wherein hay and concentrates can be fed. Only in storms is it usual to confine the flocks during the day. Ample airflow within the house must be maintained as the temperature should never be much above that outside. From reported costings the home wintering of hill ewe hogs shows a most attractive balance in favour of the hog house as opposed to 'down-wintering'.

Pig Housing

There has been a very marked increase in efficiency in the pig industry in post-war years. In rearing, for instance, whereas the average litter produced six pigs of twenty-five pounds at weaning today the litter average is eight pigs of thirty-five pounds. The developments in pig housing have undoubtedly been of considerable assistance in achieving this increased efficiency as the pig, of all our domesticated animals, reacts most sensitively to its environment.

While lacking precise knowledge of the optimum environmental conditions for the various classes of pig the work of Sainsbury and others has indicated the need for a dry bed, facilities to dung away from the bed, fresh air without draughts, freedom from temperature fluctuations and temperatures ranging from approximately 60° F in the fattening house, 65°–70° F in the farrowing house and 75° F in the piglets' nest. Humidity in the range of temperatures stated appears to be of relatively little import but high humidities at low temperatures lead to grave disorders. The importance of the periodic thorough disinfecting and resting of pig houses is being increasingly stressed.

The maintenance of good health is perhaps the most important objective in pig housing. This is being achieved in the farrowing and rearing period under systems as widely contrasting as the 'Roadknight' open air system and intensive climate-controlled crate-pen houses. As far as fattening houses are concerned, the housing systems show a greater agreement in the relative importance of the factors involved but the different husbandry methods involved make direct comparison difficult to assess.

In this paper it is impossible to consider all the types of housing now being developed but a few of the more prominent trends must be mentioned.

The Dry and In-pig Sow

Far more attention is being paid to the welfare of the sow and, on service after weaning, she is being given more individual housing and feeding until she can regain the strength to fend for herself in the herd. Again, nearing the farrowing, she is being fed in individual stalls so as to ensure her healthiest condition at her most crucial period. A wide variety of individual feeding stalls and fittings are proving a profitable investment.

'Out-door' Rearing

The portable ark has reached a high degree of development with insulated walls and roof, wind-proof porches and doors, nests and feeding creeps for the piglets and anti-crush rails. It is mainly used in conjunction with fold units and is moved regularly on to clean ground. In contrast to this system of insulation of units, the 'open-air' enthusiasts run their sows in large groups which farrow in spring and autumn, their housing comprising very simple floorless shelters. The sows are group fed and the piglets have access to large communal creeps. It is essential for this system that the sows farrow more or less at the same time and that they are of a strain capable of withstanding the more severe conditions involved. The system requires ample pasture to ensure 'clean' ground for each group at farrowing.

Farrowing and Rearing Pens

It is generally agreed that farrowing and rearing houses should be of fully insulated construction, with controlled ventilation and preferably some form of space heating supplementary to the heat lamps over the piglets' nest in order to maintain a 65°–70° F room temperature. Electric floor heating has not been adopted to any extent.

Increased importance is being placed on the complete isolation of litters and to this end full height pen division walls are built, while sweep-through dung passages are not advised. Hygiene is receiving increased attention and houses are being designed in sections which can be shut off, disinfected and rested in rotation as a guard against bacterial build up. In some instances the sows and litters are moved to 'open-air' housing in summer to allow of proper disinfecting of the permanent houses.

The general trend in farrowing pen design is to include some form of crate arrangement which will provide full control over the sow's movements at farrowing. Where separate farrowing and rearing pens are employed special crates, of both sparred and solid-walled construction have been developed to a most efficient degree, the most advanced being built within well-insulated houses so equipped to automatically maintain a constant 70° F temperature. Where the sow and litter are to be carried on to weaning in the same pen various forms of hinged crate sides are used to retain the sows at the actual farrowing.

As opposed to the above pens which involved the enforced restriction of the sow Mr. Norman Snell, in his Daylesford farrowing pen, cleverly adopts the New Zealand Farrowing Ring 'voluntary confinement principles' to the all-inside housing which is generally adopted in this country.

Whatever developments take place in farrowing pen design current experience points to the inadvisability of saving either capital expenditure or labour when such would involve any reduction in housing standards. Detail design can greatly ease management tasks in feeding, cleaning and the handling of the pigs. Sows and litters have been kept in crates with side creeps up to eight weeks and while this 'most unnatural' system has not been proved it may be a pointer to things to come—pig rearing batteries—to coin a currently popular phrase. In view of the proved value of the isolation of units in farrowing and rearing houses it is most unlikely that any extensive form of group farrowing within permanent housing will be developed.

Fattening Houses

In the early stages of fattening, up to 120 lb., pigs are generally run in larger groups, often in yards and courts where they are fed *ad lib.* from self-feeders. However, few strains of pig will provide the desired carcase quality if fed through to bacon on this system and some form of controlled feeding is necessary.

In this paper I cannot attempt to make a detailed categorisation of all the feeding piggeries developed over the past ten years but I will endeavour to outline some of the important factors which they incorporate.

Greater care is being taken in siting piggeries in relation to local micro-climatic conditions and also in planning the unit in such a way as to reduce labour in deliveries and dispatches of materials and stock.

Far greater care than ever before is being given to the maintenance of what are generally considered to be those proper environmental conditions which I have previously outlined. Today in many instances far higher insulation standards are being provided in piggeries than in domestic housing. While fair results may be attained by using natural ventilation it is recognised that only fan-assisted air-flow will give the necessary positive control. Mechanical ventilation allows of far greater flexibility in house design, it can counter fluctuating exterior wind pressures, it can provide a varying air-flow in whatever portion of the piggery it is required and it can ensure that air-borne infections are not carried from one pen to the next. The same steps towards pen segregation as previously mentioned in respect of farrowing pens are being increasingly adopted for feeding houses, even when this involves extra labour in mucking-out. However, the development of slatted-floored dung areas and the Sterovic and other sludge disposal systems allow segregation at reduced labour requirements.

While all manner of steps are being taken to reduce labour costs and the old-time drudgeries labour only represents some 12 per cent of the cost of producing a bacon pig and thence any increases which will assist to an improvement in feed (80 per cent) conversion are to be accepted.

While large pen numbers involve both reduced capital outlay and labour charges they are the exception rather than the rule. Where pigs are yarded large groups are inevitable. In order to ensure that a piggery will hold the maximum number of pigs so as to reduce capital costs and increase the body heat factor pens of graduated sizes are employed and in the ten-pig pen house such may include pens from 6 ft. to 10 ft. trough frontage.

Trough layout reflects pen numbers in relation to building economy—large pen numbers have troughs at right angles to the main feed passage, small pen numbers have troughs flanking the feed passage. The glazed fireclay troughs with both rail and swing fronts are generally employed. Various forms of mechanical feeding have been developed involving over-head feed passes with direct gravity feed of whatever ration is required, mechanical hopper conveyor with automatic individual pen rationing and the pressure delivery of wet feeding in pipes. Fully automatic systems will be slow in development as most pigmen find feeding time the most suitable for observing their pigs. Bearing this in mind the Ritchie Feeder has much to recommend it. It comprises a hopper over the trough holding a week's supply of feed with a manual lever-operated let-down of the required ration. This reduces the labour in feeding but ensures regular attendance on the pigs.

While various yard designs allow of the build-up of manure and its periodic removal at periods varying from once per week to once per six months, such can only be used in those ever-decreasing areas where straw is plentiful. The sweep-through dung passage is used in conjunction with two- and four-wheeled tractor scrapers as well as built-in mechanical scrapers. The sludge handling of dung involving saw-dust, shavings or other granular or no bedding has greatly reduced muck handling even where initial manual cleaning is involved. It is used either with open channels or Sterovic patent channels, or with long narrow holding tanks with direct outlet from every one or two pens. The slatted-floored dung pass of Norwegian origin offers a near self-closing arrangement when used with the Sterovic channel or continuous sludge tanks. While still in the development stage it appears that 2 in. by 2 in. concrete slats set 1 in. apart may provide the most suitable flooring for the system.

The planning of fenced runways (often portable sections), well planned weighing systems and loading ramps are being adopted as necessary time and temper savers.

While the move towards complete automation of the piggery will continue the animal health and stress factors will have to be rigidly respected. However, should 'tranquilliser' feeding be developed far more extensive systems than presently practised might be feasible. The continued efforts of designers in co-operation with the building trade should lead to simplification in constructional methods and a reduction in building costs.

Poultry Housing

The post-war developments in poultry-keeping have been as exciting as those in any other sphere of agriculture and progress in practice has been largely dependent on building developments.

The introduction of the deep litter system in 1947 was seized upon as a method which reduced housing costs, simplified management, cut out the drudgery of the field house system and allowed of relatively large-scale laying units at a very much cheaper outlay than the battery systems of pre-war origin. However, as with the introduction of the Danish piggery many years ago, the basic idea was adopted but no thought was given to the details. Consequently, many unsatisfactory deep litter houses were erected which lacked, above all things, the necessary insulated construction and controlled ventilation. The results were often deplorable. Probably it was the introduction of the broiler, which simply could not thrive without properly insulated and ventilated houses, which pointed the way to house the laying hen in a suitable deep litter house at reasonable outlay. The early *dèbâcle* was largely due to the farmer not knowing the required housing essentials and not demanding such from the builder. In the early days of deep litter the manufacturer offering a house of satisfactory standards had few sales.

The battery cage makers, noting that the cost of satisfactory deep litter housing was considerably in advance of the original houses, renewed their efforts to retrieve their previous supremacy and modified their designs to include double and multiple cages and a very near degree of automation in their servicing. This 'renaissance' again placed them on a competitive footing with deep litter houses which at that time made an allowance of some 3–4 sq. ft. per bird.

The Americans, who surprisingly have never produced a battery unit to our standard of automation, were meanwhile endeavouring to reduce deep litter housing costs by a greater intensity of stocking in a house of refined detail design, the Solar House. The main experiments were carried out at Pen State University where a very highly insulated, double-glazed, mechanically ventilated house with equipment comprising three tiers of automatic feeders and waterers and five tiers of perches set over a mechanically scraped droppings pit allowed an intensity of under one bird per square foot. The success of this experiment inspired the intensification and mechanisation in deep litter houses of more normal design.

One marked step forward in this country was the introduction of the wide span (37 ft.) Ogier–Sykes house of American inspiration. First used as a broiler house the economy in design soon proved very popular for housing the adult layer. Careful planning of equipment on time and motion study principles with full recognition of the all-important husbandry factors has resulted in a house of great economy in all respects whether partially or fully mechanically equipped. One prominent manufacturer has just erected a highly mechanised demonstration house, 200 ft. by 40 ft., which will house 6,000 layers at a reported cost of a little over £1 per bird. Such a house could be run by one man. It is not for the architect to comment on the husbandry factors involved in this most intensive stocking other than to remark on what must be a breeder's achievement in producing birds to withstand the stresses involved. What price the small-scale producer?

One recent development which can help the small-scale producer to increase his stocking at minimum expense is the introduction of the slatted floor. This employs either slats set apart or heavy wire grid of

4 in. by 1 in. mesh, formed in panels for removal for annual cleaning out. With the addition of such a floor together with the necessary extra feeders, waterers and nests, the number of stock can usually be doubled. If once-a-year cleaning is to be employed the slatted floor must be at least 2 ft. above sub-floor level. While the slatted floor eliminates all the problems of deep litter the housing standards can be in no way reduced and great care must be taken to ensure the proper insulation and ventilation of the house.

The introduction of the broiler into this country brought benefits in many secondary spheres, quite apart from the increase in layers to producer broiler hatching eggs. The production of the broiler demanded a house of a degree of specialised construction never before adopted in our poultry industry and the broiler, especially in its early days, could afford to pay an economic rent for such a house with the specialist investment risk included. The rapid expansion of the broiler industry required increased accommodation to a degree never before seen in agricultural building and this has encouraged the large-scale manufacture of broiler housing. Furthermore, the demand has been such as to attract new constructors and building material suppliers to give special attention to the broilers' housing requirements.

The methods of construction and combination of materials employed in modern poultry housing are many. Largely due to the enthusiasm of the indefatigable Dr. Sainsbury a research project, financed by over twenty industrial organisations and involving the erection of three buildings, has just been inaugurated at Cambridge University. Many different materials and methods of construction have been employed in their construction and results of Dr. Sainsbury's studies will be invaluable to the future development of the industry.

Building Materials and Construction

Space forbids all but the briefest passing comment on the vitally important subject of building materials and construction. As stated by that eminent authority, W. G. Benoy, our farm buildings were, until the last war, domestic in character and usage, but our present farming is surely much more akin to factory procedure with factory standards of efficiency, lighting and maintenance.

In accepting this situation we have a vast choice of structural forms and materials to chose from, and in this respect the farmer will be well advised to obtain the best professional advice. Most new buildings will comprise frame structures of steel, reinforced concrete or framed and laminated timber, each having its particular merits under different conditions and all permitting of wide clear spans. The new paints for steelwork giving an electrolytic bond have, to a large extent, eliminated the old rust bogey while the pressure preserving of timber gives it a very long maintenance-free life. The use of frame structures permits not only future adaptability in building use but a combination of contractor-farmer construction team wherein the contractor erects the main framing and roof sheeting and the farmer completes the panel walling and internal fittings.

One word of warning—while do-it-yourself methods are most attractive to the farmer for many reasons he should only undertake building work of a scale and type well within his particular capabilities. How often, of late, has one seen the utter waste of labour and expensive materials in producing shoddy structures which will never give the service required of them. This is particularly the case in supposedly heat-conserving insulated buildings.

For roof coverings the choice lies between asbestos, galvanised and 'protected' iron, and aluminium sheetings, each again with its particular virtues. One important fact must be borne in mind when using such single-skin sheetings over livestock—condensation is inevitable unless an ample air-flow in and around the sheeting is planned, and where protection beyond a wind and rain barrier is required some insulation roofing materials must be used.

While there is a vast selection of 'built-up' insulated roof coverings there is a great market awaiting the introduction of a single-skin material comprising a weather-proof exterior face, an insulation core and a hard, vapour-proof inner face.

The maintenance of farm buildings must and can be reduced to an absolute minimum. Simplicity in construction, the substitution of expensive framed windows by 'Perspex' sheets, the use of metal-covered wood-framed doors, the pressure-preserving of all woodwork, rainwater gutters of ample size with iron down-pipes properly protected are but some effective steps to this end.

Until recently, in most respects, agricultural building has been a 'cinderella' and in the post-war building activities little special attention to its particular requirements was given by materials manufacturers. This situation began to change when the demand for insulated pig housing created a noticeable demand for special service, but the extraordinary broiler expansion has so altered the previous state of affairs that manufacturers are now even producing special leaflets showing the applications of their products in the agricultural field. The construction of heat conserving insulated structures demands particular study in choosing materials and the particular use of the chosen materials. For positive results the farmer should take independent specialist advice. Again I would draw attention to Sainsbury's projected studies at Cambridge of houses using a range of materials which include resin-bonded plywood, asbestos, wood-wool slabs, aluminium-faced building papers, polystyrenes and concrete.

The lack of a development organisation in this sphere is most noticeable, particularly in the field of temporary structures. Praise is due to the study given to their products by the more progressive broiler house manufacturers who are developing techniques to answer their particular requirements which would compare well with the advances in any other building activity.

Future Progress

The development of farm buildings in the future will be intimately linked with the development of the related agricultural sciences whose findings the buildings are required to serve. In the field of livestock, husbandry research should define more precisely the environment for the maximum thriftiness of various classes of stock and this requirement will have to be provided. The development of strains of animals which will produce the desired carcase and other standards when fed *ad lib.* would lead to overall simplification, the extension of self-feeding principles, the simplification of troughs and feed handling methods and a greater flexibility in building used. The use of 'tranquillisers' in the rations may so minimise 'animal stresses' as to allow a greatly intensified degree of stocking (some fifteen years ago the modern concept of broiler housing would have been laughed out of court). As health must be maintained at all costs, the degree of intensified stocking will reflect the skills of the veterinarian and management techniques.

The handling of materials within the steading will undoubtedly be developed to near or complete automation, an advance largely dependent on the skills of the agricultural engineer, who may, to achieve his ends, require modification of the materials he has to handle. Thus developments within the farm steading will be dependent on the co-operation of the skills of various specialists who will require to have an understanding of the scope and limitation of each other's activities, bearing in mind all the time a realistic economic conception.

Development in the future may well follow two courses simultaneously. We shall probably see the extended use of the frame structure with 'dexion-type' demountable internal framing and standard in-filling panels as well as panels of cheap construction which can be readily demolished. The scope of this type of development is almost limitless. The floor can be laid in panels to a system of drainage channels which can be used as desired. Where a controlled environment is required light partitions and ceilings of high insulation value can be used to section off the desired area and power fans can control the air-flow. Within such a building full scope for automation is available.

The second course of development may well see the production of low-priced specialist buildings which will have a limited life of, say, fifteen years. The available materials and constructional methods for experiment are many. What will be essential is a proper organisation to further such developments.

There are specialised establishments for research into practically every other section of the agricultural industry except farm buildings. The results of this tragic omission have involved the industry in tremen-

dous waste of capital and continuing waste in labour. In our country we undoubtedly have some of the most enterprising farmers in the world and they are continually developing new ideas in techniques affecting buildings which require research, investigation and development, but the proper testing of these almost always is beyond their scope. Furthermore, through lack of co-ordination in development work, much repetition is involved and important innovations are often unknown beyond the neighbourhood of their development. This is the only major agricultural country in western Europe without a research and development organisation for farm buildings. The A.R.C. is increasingly sponsoring projects relating to farm buildings which will give results of undoubted value and it has recently inaugurated a small research unit on the subject, but this latter is quite inadequate in conception to carry out the copious tasks required of it. Until this omission is rectified the full potential of our farmers' enterprise will not be developed.

Quite apart from the question of adequate research and development techniques the industry suffers from a 'lack of good faith' between the farmer and his professional advisers in farm building matters and as a result only perhaps 5 per cent of farm buildings are erected under professional supervision. This situation has arisen from the fact that in the past the general professional practitioner, architect or civil engineer has not received sufficient agricultural commissions to warrant his making a specialised study of farm buildings and, accordingly, he has been responsible for many unfortunate projects. The farmer, in his turn, having a general lack of faith in the private practitioner, has failed to demand sufficient work which would warrant the specialised study of his subject.

Even if sufficient highly skilled private advisers were available, would the farmer be prepared to pay for their skills or would he continue as at present?—getting valuable but limited advice from government farm buildings advisers, the benefit of the country builder's experience, and in so many instances building only to answer his immediate pressing requirements with little thought of the future. *In some ways it is unfortunate that a long-term building development plan had not been considered as a prerequisite to all applications under the Improvement Scheme.*

In conclusion, if farm buildings are to play a full and realistic part in the advancement of agriculture far more thought will have to be spent on development projects, embracing the full co-operation of all those involved. The inevitable progressive expansion in building science will provide new materials and methods of construction. The ever-present need now and in the future is for more considered thought at all stages.

Acknowledgement

The Bledisloe Lecture was given in October 1959, under the auspices of the Royal Agricultural College Association, by whose courtesy it is printed in a slightly abbreviated form.

Technical Column

'Thinking ahead about the building industry'

On Tuesday 22 March at 6 p.m. Mr. Peter Trench, O.B.E., T.D., B.Sc., Director of the National Federation of Building Trades Employers will be giving a paper at the R.I.B.A. Previously Mr. Trench was joint managing director of Bovis Ltd. The title of his paper is self-explanatory. Admission is free and no tickets are required.

'The shop and its environment'

There will be an informal symposium on Wednesday 23 March from 2 p.m. to 8 p.m. The subjects under discussion will be: the pattern of shops and shopping centres; the car versus the shopper; making the shopping centre pay in cash and amenity; present developments in department stores, chain stores, self-service stores and small specialist shops. Admission is by ticket, price 10*s.* from Mr. Anthony Williams, Assistant Secretary R.I.B.A.

Discussion on design and costs

On Tuesday 29 March at 6.30 p.m. there will be an open discussion at the R.I.B.A., the sub-title of which is: Are aesthetics and cost planning incompatible? Mr. Harry Ward, acting as 'client' will give an uninhibited introduction. In the chair will be Mr. R. Baden Hellard and he will be supported by a panel consisting of Mr. G. Grenfell Baines, Mr. Geoffry Powell, Mr. L. J. Fowler, Mr. A. J. Harris, Mr. J. Nisbet and Mr. Erno Goldfinger. The panel will explain their individual approaches to design and cost and will then be prepared to answer questions from the audience.

Members are invited to submit questions that they would like to put to the panel, on postcards addressed to the Secretary, Management Committee, R.I.B.A., to arrive not later than 20 March. Admission is free and buffet refreshments will be on sale from 5.30 p.m.

Course of lectures on fire protection

Copies of the papers for this course are available from the Technical Department, R.I.B.A., price 5*s.* These include: The effects of fire in buildings, by Eric L. Bird, M.B.E., M.C. [*A*]; The principles of structural fire protection, by L. A. Ashton, B.Sc.(Eng.); The fighting of fires in buildings, by E. A. Hibbett; and Means of escape from fire in buildings, by S. D. Studd, F.I.A.S.

The distribution of building materials

A useful pamphlet is now available free of charge to architects. It is produced jointly by the Building Industry Distributors, the National Federation of Ironmongers (Builders' Supplies [Wholesale] Section) and the Federation of Plumbers' Merchants. The pamphlet is divided into sections on: objectives, stocks, transport, showrooms, pre-order services, post-order services, benefits to the builder, advantages for the manufacturer and progress. One or two interesting facts emerge: there are 66,000 persons employed in building material distribution. Distributors carry over £50,000,000 of stock at any given time, with an annual turnover of more than £250,000,000. Copies are available from the Building Industry Distributors, High Holborn House, 52–54 High Holborn, London, W.C.1.

Manufacturers' Trade and Technical Literature Competition, 1959. Sponsored jointly by R.I.B.A. and Building Centre: Assessors' Report

'We were impressed by the generally high standard of entries and by the very large increase in the proportion of entries which conformed as to size with B.S. 1311: 1955. We sympathise, however, with those firms whose printers failed to trim otherwise standard literature to within the tolerances laid down. In judging the entries we have followed closely the recommendations for good technical literature set out in the competition leaflet. Entries which have failed to gain awards or to qualify as being of an acceptable standard have, without exception, failed to comply with one or more of the requirements laid down. In particular we wish to stress that some guidance on cost should always be given. It is not enough to say that prices are competitive.

'We noted that good typography and good information did not always go hand in hand. When it did, the result was sometimes spoiled by the bad organisation of the material provided.

'Late entries were not considered for the top awards.

'We consider that this series of competitions has already brought about a marked improvement in trade and technical literature among the more enlightened firms, and we strongly recommend that the series should be continued. We suggest, however, that since the number of firms submitting entries is small compared with the total number in the industry, consideration might be given to providing wider publicity for the competition.'

The Assessors, nominated by the President of the Royal Institute of British Architects, were: Mr. George Grenfell Baines [*F*], Sir Hugh Casson [*Vice-President*], Mr. Bruce Martin [*A*], Mr. Bryan Westwood [*F*].

Mr. Edward Mills, C.B.E. [*F*], was originally nominated as a member of the jury but unfortunately was unable to take part in the judging.

The assessors' awards were as follows:

Certificates of Exceptional Merit. Class I. Troughton and Young (Lighting) Ltd.

Class II. The Cement and Concrete Association.

Certificates of Merit. Class I. Ferodo Ltd. (Runners-up for the Certificate of Exceptional Merit); The British Aluminium Co. Ltd.; Redland Tiles Ltd.; The Universal Asbestos Manufacturing Co. Ltd.

Class II. Coal Utilisation Council.

Honourable Mentions. Heal's Contracts Ltd.; Imperial Chemical Industries Ltd.; H. Newsum, Sons and Co. Ltd.; Profiled Spandril Panel Co. Ltd.; Q.V.F. Ltd.; Watts Metal Industries Ltd.; Natural Asphalte Mine-Owners and Manufacturers' Council.

The Scottish Building Centre

The Scottish showing of the R.I.B.A.—*Ideal Home* Magazine Small House Scheme exhibition is being held at the Scottish Building Centre, Sauchiehall Street, Glasgow, from 1 to 12 March inclusive.

ANTHONY WILLIAMS [*A*]

Practice Notes

Edited by Charles Woodward [*A*]

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Highways Act, 1959. The Minister has now made the Public Path Orders Regulations, 1959, under the Highways Act, 1959, which became operative on 1 January 1960. They provide for various procedural matters under the act and apply to public path creation, extinguishment and diversion orders. Procedure for making claims for compensation is included in the regulations.
(S.I. 1959 No. 2245, *The Public Path Orders Regulations*, 1959, *Rights of Way*. Obtainable from H.M.S.O., price 5*d.* net.)

Town and Country Planning. (Control of Advertisements) Amendment Regulations, 1960. Circular 3/60 dated 27 January refers to these regulations which came into operation on 1 March, obtainable from H.M.S.O., price 3*d.* net. The regulations enlarge the discretion of planning authorities to grant express consent for the display of certain kinds of advertisement in areas of special control, simplify and otherwise improve some of the procedure and make a few minor amendments gained from experience over the past few years.

The circular is obtainable from H.M.S.O., price 4*d.* and gives the Minister's view that advertisement control should be directed at securing that advertisements are displayed in the right way and in the right places, but not otherwise. He hopes that all authorities will show willingness to negotiate with advertisers and will adopt a realistic and reasonable attitude to new ideas.

MINISTRY OF EDUCATION. Educational Building. Limits of Costs for School Building Projects. Circular 4/59, Addendum No. 1, dated 14 January 1960, issued by the Ministry, states that in calculating the limits of cost of new schools announced in Circular 4/59, no special allowance was made for cases in which a high percentage of pupils were expected to take the school meal. Accordingly the Minister has decided to introduce the arrangements set out in this addendum to Circular 4/59 for calculating the limit of cost of new secondary schools included in the 1960–61 and subsequent building programmes. He is satisfied that it is unnecessary to introduce similar arrangements for primary schools, but the new arrangements will also apply to all-age day schools for educationally subnormal children of both sexes (see paragraphs 13 and 14 of Circular 4/59).

The addendum sets out in detail the way authorities should make their estimates of numbers expected to stay for the school meal, and is obtainable from H.M.S.O., price 4*d.* net.

TOWN AND COUNTRY PLANNING IN BRITAIN. The Central Office of Information has prepared the latest edition of the pamphlet under the above heading published by H.M.S.O., price 2*s.* 3*d.*

The pamphlet covers the development of planning since 1909 and includes the Town and Country Planning Act 1959. It provides an interesting survey of legislation between those years. The chapter on administration of planning could, with advantage, be brought to the attention of clients who engage an architect in connection with a building project. It should demonstrate that an architect's services do not merely include the preparation of a scheme to suit the client's requirements, but points out the various permissions that have to be obtained before such a scheme can be put before the client. When the building is satisfactorily completed it would perhaps be tactless to include the cost of the pamphlet in the architect's account for fees.

NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY. Building Wages Increases. The National Joint Council for the Building Industry met in London on 12 February and received a report from the committee which it appointed on 14 January to examine the application of the National Federation of Building Trades Operatives for an increase in wage rates of 4*d.* per hour. The Joint Council approved a recommendation of the committee that the standard rate for craftsmen in the building industry should be increased by 2½*d.* per hour and the rate for labourers by 1½*d.* per hour. The Joint Council agreed to recommend to its constituent employer and operative bodies that the increases should come into effect on 18 April.

CIVIL ENGINEERING CONSTRUCTION CONCILIATION BOARD FOR GREAT BRITAIN. 40-hour Week in Winter. On 20 January agreement was reached on the reduction of working hours from 44 to 40 per week in the winter months November, December, January and February. The agreement came into operation on 29 February, and its terms are as follows:—

Working Hours. At present, working hours are 44 hours per week throughout the year. They will be reduced to 40 hours per week in November, December, January and February, continuing at 44 hours per week in the remaining eight months of the year. This gives an average of 42⅓ hours per week over the year as a whole.

Basic Wage Rate. To be increased by 1½*d.* per hour. At present, navvies' or labourers' basic wage rate is 4*s.* 4*d.* per hour in London and 4*s.* 2½*d.* per hour elsewhere. The craftsmen's basic wage rate is at present 4*s.* 10½*d.* per hour in London and Liverpool and 4*s.* 9*d.* per hour elsewhere.

Overtime. At present, the overtime rates for the first four hours of overtime are time-and-a-quarter for the first two hours and time-and-a-half for the following two hours. Under the settlement, the overtime rate will be time-and-a-half for the first four hours.

LONDON COUNTY COUNCIL. London Building Acts, 1930–39. Relaxation of By-Laws. The relaxation of by-laws is normally considered on application to the Superintending Architect at County Hall, but arrangements have been made for relaxations to be issued in certain cases from district surveyors' offices. Details are set out in the Council's publication, *Construction of Buildings in London* (1957) —*Supplement No. 1*, now available, price 9*d.* (post free 11*d.*) (Publication No. 4063). Obtainable at The County Hall, Westminster Bridge, S.E.1.

Developers who wish to avail themselves of this facility are advised to consult the district surveyor, but it should be noted that the new procedure applies only to relaxations which are to be the subject of amendment when the London Building (Constructional) By-laws 1952 are revised. In any other case application must be made to the Superintending Architect at County Hall, Westminster Bridge, S.E.1. (29 December 1959.)

Delegation of Town Planning and London Building Act Functions to Metropolitan Borough Councils. From 1 January 1960 certain applications under the Town and Country Planning Acts and the London Building Acts and By-laws are being sent by the London County Council to the metropolitan borough councils to deal with in accordance with proposals recently approved by the Minister of Housing and Local Government.

The types of planning application concerned comprise in the main those relating to changes or continuations of use and alterations and additions within certain defined limits as to cubic content and floor space where no departure from primary zoning is involved.

The Building Act applications to be delegated comprise in the main those where the

Council is not dealing with the planning aspect and where consent is required to projections in advance of the building line, temporary buildings, the conversion of houses into flats and the uniting of buildings, including the provision of means of escape.

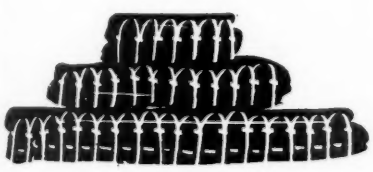
The procedure for making applications remains the same, i.e. all applications should be submitted in the first instance to the L.C.C. who will continue to maintain the Statutory Register of town planning applications and decisions. When an application is delegated to the metropolitan borough council concerned, the applicant will be so informed. All further contact on that particular application will then be direct with the metropolitan borough council. (30 December 1959.)

Aldwych Theatre, London. The chairman of the Town Planning Committee was asked whether:—

(i) he had seen in the national press a statement that the Shakespeare Memorial Theatre is negotiating to become the lessee of the Aldwych Theatre, Westminster [the Cities of London and Westminster] and to put on plays in the west end of London as well as in Stratford-upon-Avon, Warwickshire;
(ii) he had received or heard of an application to demolish the Aldwych Theatre and replace it by an office block, and, if so, whether he agreed that this would kill the proposals of the Shakespeare Memorial Theatre;
(iii) the Council should adhere to its policy of refusing planning permission for schemes which do away with places of assembly, particularly theatres, in central London.

Reply by the chairman of the Town Planning Committee:

(i) Yes.
(ii) The Council has refused two applications, in October 1958 and July 1959, which would have involved the demolition of the existing theatre and its replacement by a building for use as a theatre, shops and offices. In each case the Theatre Preservation Council was consulted. The Council has now been asked to consider revised drawings, but no further application for planning permission has yet been made. There has been no proposal for an office block alone.
(iii) The Council adheres to the policy set out in the Development Plan that permission will not be given, except in very special circumstances, for a change of use for office purposes in places of assembly. (26 January 1960.)



Correspondence

The Editor, R.I.B.A. Journal

GOVERNMENT SUPPORT FOR INDUSTRIALISATION OF BUILDING

Dear Sir,—I don't think one can expect the building industry to evolve towards a goal of complete industrialisation without a push from the Government. It is interesting to observe how prefabrication has evolved in France since the war and how it has been supported by the French Government.

It was in 1943 that the then French Ministry of Reconstruction first launched competitions for ideas for prefabricating major parts of buildings, and when the war ended experimental building sites were set up to try out suitable systems. In 1951 the Government created a 'sector of industrialisation' in the building industry in order to reduce costs and improve the quality of building. About which time the Centre Scientifique et Technique du Bâtiment began to judge systems of prefabrication and issue licences to those judged suitable. The designers were asked to make any amendments considered necessary and the systems were carefully supervised by Government engineers during the process of building. In 1953 'design—construction' competitions were initiated which required the submission of a project drafted by a team of architects and engineers. This made possible a fully organised process of prefabrication, transportation and site erection, everything adopted to suit a firm's means.

In 1956 the Government reserved an 'industrialised sector' of 12,000 flats a year which are built on sites with 200 to 1,000 flats, 200 flats is considered a minimum number for obtaining economic prices with prefabrication. The special funds for low cost housing have included since 1955 a 'section of productivity' from which aid is given to firms prepared to change their methods of building and increase their productivity. This aid for firms using prefabrication has had a stimulating effect on the building industry and has brought about an evolution of traditional methods as well. There is a considerable use in France of perforated bricks similar to the ones designed by the Building Research Station, and of hollow clay blocks for casting in the form of floor and wall panels. The shuttering for concrete buildings has also been standardised and work methods improved by the use of new heavy machinery.

Some of the fully industrialised firms have been building for ten years and they have now overcome many of the initial problems of their systems. It was a pleasure to see the high quality of finishes achieved in a group of point blocks going up in the Paris suburb of Pantin. At the same time the rate of erection was equal to eight flats a day which is the daily output of the factory.

It is sad to note, however, that there is still only 4 per cent to 5 per cent of French housing being built with fully industrialised methods when there exists a potential of 10 per cent.

Yours faithfully,

GORDON YOUNG [*A*]
Paris.

REPORT OF THE COMMITTEE ON ARCHITECTURAL EDUCATION

Dear Sir,—The letter from the Chairman of the Board of Architectural Education in the February JOURNAL brings to the fore the basic dilemma in which the educationalists find themselves.

He gives an assurance that the External Final Examination will be retained as long as there is a demand for it but then states categorically that the Board is opposed to part-time education.

I feel sure that many members think that the retention of external training is an economic necessity both for students and employers and the proposal for a technicians' qualification is not a wholly adequate substitute.

It is therefore the Board's task to consider how external training can be improved, not just to be obstructively opposed to it.

Part-time training has been the Cinderella of architectural education for too long.

As a start it could admit (as it does not at the moment) that there is a basic difference between Evening Courses and Day-release Courses, and that attendance at a properly organised training centre for at least one whole day per week for all students is very desirable. I am convinced that the Evening Course as such, is quite inadequate and should be abandoned.

Having been associated with a Day-release Course for ten years, I know that this is one way in which the low average examination results referred to by Mr. Beaty-Pownall can be materially improved upon. The results obtained in examinations by our students prove this conclusively.

Speaking as an employer, I would say that the Day-release principle can be arranged without undue inconvenience to office routine.

The 'Sandwich' course, on the other hand, which involves considerable periods alternately in office and full-time school, would be very difficult to cope with and I am doubtful if the service of such nomadic staff would be of much value to an employer, or that students themselves would benefit greatly from it.

Yours faithfully,

C. G. PERCY [*A*]

Dear Sir,—The Council's approval of the recommendations of the Oxford Conference has aroused opposition in certain quarters and has even prompted the suggestion that there should be a return to articled pupillage.

The proposals of the conference are not

a reflection on the abilities of those who qualified externally in the past, but acknowledge changing conditions and the fact that now, and even more in the future, efficient school training is essential.

A great many architects are not in a position to help their junior employees to a liberal understanding of architecture, and no one would suggest that this is their aim in employing them. Education is initially the responsibility of the schools, but architects can make an important contribution when they employ students from the 'sandwich' courses.

It should be more generally recognised within the profession that the aim of the schools is not to produce 'draughtsmen architectural', but students who will continue to educate themselves and who look upon 'architecture' as a way of life rather than a means of earning a living.

Yours faithfully,

IAN W. CRAWFORD [*A*]
BARBARA CRAWFORD [*Student*]
Nairobi, Kenya.

SLIDES OF STAINED GLASS

Dear Sir,—The Department of Stained Glass, in the Royal College of Art, is most anxious to provide its students with an important facility—a suitable collection of colour transparencies, enabling students to study the best examples of ancient and modern glass from all countries.

An attempt is now being made to build up a 'library' of slides; and architects whose special interest in stained glass has prompted them to take photographs—especially details—of fine glass, in this country or abroad, are now invited to assist in building up the nucleus of what will become an essential reference collection for students in all departments.

Finance is limited, but it will be possible to make payment for all slides selected. Extreme care will be taken of any slides which can be lent to the College so that coloured copies can be obtained, the originals being then returned.

General pictures and especially details of glass, of all periods, from as many countries and by as many artists as possible, will be greatly appreciated; and if particulars can in the first instance be sent to me at the address below, this will be of the greatest assistance. The slides will find the very greatest use as an inspiration to our future stained-glass artists and craftsmen.

Yours faithfully,

DONALD W. INSALL [*A*]

Department of Stained Glass, Royal College of Art, South Kensington, London, S.W.7.

SMALL HOUSE PLANS

Dear Sir,—May I reply to the letter from Mr. L. H. Kemp, in the January issue of the JOURNAL.

It would seem that the operational word in my letter regarding Advertising, etc., has been missed.

My comments on the issue were . . . 'if', this kind of thing is sponsored and allowed by the Institute . . . 'then', Architects should be allowed to advertise and obtain work in anyway they can.

Thus, it will be seen that I am quite in agreement with his opinion, and also are very many other Architects; the time is certainly long passed, when Architects should be restricted by outmoded and stupid ideas regarding advertising and that all members should be free to promote their services in anyway whatsoever.

Wholeheartedly I would agree, that Civic bodies, Councils, etc., should only approve plans for buildings, etc., if prepared by Qualified Architects, but unless legislation is passed enforcing this, there would seem to be little or no possibility of it ever being achieved for it is well known that there are members on Planning and Housing Committees who cannot read a plan or fully interperate [*sic*] the meaning of Elevational Treatments, one reason for this is that the wrong members are put on such Committees and only legislation could enforce the issues.

Yours truly,

JOHN S. HOUGHTON [*L*]

Dear Sir,—Heaven forbid that Eric Ambrose should raise the banner of revolution. At his age he should know better, but if he wants to stick his neck out for the Cause, then all good luck to him.

Personally, I never mind being shot at by my professional colleagues, but I'm damned if I'm going to extend the invitation to my clients, friends, acquaintances and other local citizens, nor do I propose to engage in a permanent war with all the Local Planning Authorities in this area for the sake of an artistic ideal which in ten years' time will be common practice anyway. Regretfully I must confess that I am not the Crusading type.

Contrary to Mr. Ambrose's deductions, I do not consider that he and his co-assessors failed because they were true to themselves, but rather because their interpretation of the objects of the competition was one which fulfilled them to a very much lesser degree than was possible.

My criticism of the book *Small House Plans* was based on my belief that for the most part the plans were so far in advance of public taste, that instead of creating enthusiasm, they would only result in antagonism to the profession. I am still of this opinion.

In the past few years much of the work previously done in builders' offices has been carried out by architects, and the profession has been surely and steadily gaining ground in public opinion. I think it would be wise to consolidate and improve on this position before moving too far ahead.

As regards defeatism—not guilty, Mr. Ambrose. I do not for one moment suggest that we should give up our ideals, but we must have patience. In other words, let us have evolution, not revolution. We can lead public opinion, but we cannot drive it. If we keep a little ahead they will follow, but if we get too far ahead they will class us as cranks. By all means let us have a few 'Pathfinders' way out in front, but don't try to kid the public that theirs is the architecture of today. The public may be gullible, but not that gullible.

While on the subject of business, may I thank Mr. Loweth for contributing a little common or garden horse-sense. Artistic enthusiasm is very necessary and the profession would be nowhere without it, but one must never lose sight of the pounds, shillings and pence. Enthusiasm for one's art is no substitute for four square meals a day.

I think Mr. Gudenian's official in Paris must be pulling his leg, but if he is not, then he must either be one of the boys working for the British Council and long overdue for a haircut, or a bright lad who doesn't intend to retire until 1980 anyway.

But quite seriously, I think it would have been better if the term 'Contemporary' had been included in the title of the book, for quite frankly I have had a number of older clients who have been more than a little annoyed to pay 15*s.* for a collection of designs which in the event offered nothing which even remotely satisfied their requirements.

Yours sincerely,

P. N. DEAN [*A*]

PROFESSIONAL PRESTIGE AND 'BIG WORKS'

Dear Sir,—Until a few years ago, architectural designs were always described in the Press as the work of the architect concerned for his named clients.

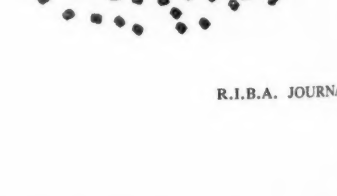
Designs for the modern unclothed structures now appear to be submitted by 'The Combined Co-operative Investment Trust Company Limited' or 'The Blank and Bleak Many Holdings Company Limited', 'The Complete and Utter Development Group of Companies Unlimited' or 'Administrative Designers and Constructors Limited'.

Do the managing directors 'knock up' the plans by the cubic yard and staple the parts together, or are there so many architects also in combined groups attached to a subsidiary of a subsidiary company that no individual or one firm can claim the authorship of the (architectural design?), well, say the working drawings?

Seriously, however, is this not leading to the extinction of professional prestige of architects?—or is it better this way?

Yours sincerely,

WALTER E. CROSS [*F*]



Questionnaire on Housing Standards

The Central Housing Advisory Committee of the Ministry of Housing and Local Government sought the answers of the R.I.B.A. and of other organisations to a questionnaire compiled by their Sub-Committee on Housing Standards. The questions (printed in italics) and the R.I.B.A.'s replies to them are given below.

THE FOLLOWING ANSWERS to the questionnaire are given subject to certain overriding considerations. The R.I.B.A. feel that in many cases the questions are framed in terms which suggest an approach in conformity with existing practice; they appear to be posed in an attempt to achieve generalisations which cannot be stated in terms precise enough to be of any real value. It is important that housing standards should be sufficiently flexible to permit, where necessary, unusual design approaches. It must also be emphasised that house design cannot be dissociated from housing layout and further reference to this aspect of the problem is made later in this statement.

The R.I.B.A. would like to have the opportunity to amplify by oral evidence before the Sub-Committee the answers given below.

GENERAL

1. The most obvious matters of which relatively little account has so far been taken in the design of dwellings are:

(1) television
(2) space for modern household equipment such as washing machines, spin driers, etc.
(3) quiet places for children and adolescents to study
(4) (for some dwellings) cars

Can you suggest any others?

2. Do you foresee any other major changes in patterns of living in the relatively near future?

1. Before suggesting any further factors which might be taken into account the R.I.B.A. would like to make the following observations on the four matters already mentioned in this question:

(1) **Television.** Some interim mitigation of the visual effect of TV aerials should be sought and there are two possibilities at present which could help in this direction: i.e. (i) an all-purpose aerial for use with television and HF radio such as that used in Stevenage, and (ii) 'piped' television, abolishing altogether the need for aerials.
(2) **Equipment.** There is little standardisation of kitchen equipment and a tendency for this equipment to get larger and for more fittings to be used. The planning of kitchens should take this into account.
(3) **Study space, etc.** It is not possible except in large houses to provide for all types of activity. The bedroom could be made big enough to contain a sitting space and also to be used as a study. Space should be allowed for the pursuit of hobbies.
(4) **Cars.** Provision should be made on the basis that ultimately every household will have a car, and since the house is the centre of social activity, space should also be provided for visitors' cars. The solution to these problems will naturally have a far-reaching effect on the layout and design of estates.

In addition to the above matters, the following should also be taken into account in the design stage:

(a) methods of heating in relation to spatial requirements;
(b) flexibility in the use of space to permit the maximum variation within a given house and layout plan form to take account of individual preferences;
(c) the proper conception of private garden space and its relation to living space;
(d) the possibility of using the 'expandable' house design;
(e) the impact of mass-production and new materials on design.

2. It seems likely that the process of levelling up of salaries and wages at a higher economic level will continue. This could result on the one hand in a call for more house ownership and on the other hand for higher standards of equipment and comfort. Either way the standards of publicly-owned housing will need to be adequate to satisfy the new middle class.

If more housewives take part-time jobs, this will create a demand for additional labour-saving devices in the home and for communal facilities such as central laundries of the 'launderette' type. If labour is to be transferred from one area to another more often, it may be necessary to standardise house design to some extent.

FLOOR SPACE

3. Please give your opinion on whether, generally speaking, the space provided on current design practice in (a) houses, (b) flats is reasonable.
4. If not, please indicate the type of dwelling concerned and whether the changes you think necessary should be in

(a) living-rooms; (b) bedrooms; (c) kitchens; (d) bathrooms; (e) circulation space

or in some other part of the dwelling or block, such as a utility room, store, etc.

3. The R.I.B.A. are of the opinion that present standards of space in house and flat design must be regarded as minimal and could be increased with advantage. Nevertheless it would be wrong to criticise areas arbitrarily since much depends on the design of interrelated spaces. The great need is for freedom to plan space within a total area related to a total cost: this matter is dealt with later.
4. In general more space seems to be necessary for circulation. At the moment certain essential requirements tend to be ignored. The reductions in circulation space recommended in the ministry's publication *Houses 1953* have resulted in spaces which in practice are found to be too small. Storage areas also need to be increased, but the most important factor is to be able to adjust the size of various rooms so that different patterns of living can be accommodated.

ARRANGEMENT

5. Have you any comment to make upon the usual living arrangements?

(a) kitchen plus dining-room plus sitting-room
(b) kitchen plus living-room in which meals are taken
(c) dining-kitchen plus living-room
(d) kitchen-living-room plus sitting-room

6. Have you any comment to make upon open-planning?
7. Have you any suggestions to make on possible living arrangements better adapted to present conditions and future trends?
8. What in your opinion is the order of preference of the following methods of front to back access in the terrace house?

(a) tunnel passage; (b) through store; (c) front store and kitchen; (d) front store and utility room.

Do you regard any of these as unacceptable?

5. As to the living arrangements specified in the question, it is not possible to give any useful answer: each of the arrangements mentioned is necessary and useful according to the type of house under design.
6. Open-planning can be a good arrangement in some circumstances but requires great skill in the design of a convenient and stimulating environment which can be divided temporarily. Adequate heating is the most important factor in this type of planning.
7. Standards should be flexible so as to cater on the one hand for the family requiring a large living space and a minimum number of bedrooms, and on the other for those who would prefer bed-sitting or study rooms but a smaller living-room. Many variations within these extremes are possible. One bedroom might be placed on the ground floor with direct connection to the living-room: the additional space thus achieved could be used in a variety of ways.
8. In so far as it is possible to answer this question, our order of preference would be as follows:

(1) through store
(2) tunnel passage
(3) front store and utility room
(4) front store and kitchen.

None of these methods, however, is as successful as the service court layout providing direct access to the service side of the house.

HEATING

9. Please indicate the trends for home heating as you see them.
10. How far do you consider that heating in the low-cost dwelling can reasonably be improved?
11. To what extent do you foresee a demand for whole-house heating systems even if they cost more in capital and running costs?
12. Would it be true to say that in practice the possibility of better heating at low cost depends upon improved insulation?

9. In spite of improvements in the design of heating appliances during the post-war years, heating standards in houses remain generally inadequate and there is still little relationship between methods of heating and the design of the spaces in the houses. It is interesting to note that once an efficient heating system has been experienced, higher standards become a necessity.

10, 11. There will undoubtedly be an increasing demand for central heating either by the orthodox methods or by electric under-floor systems, although the latter are still in their experimental stages. Again it must be recognised that any efficient heating system has to be paid for although increased incomes should make this higher expenditure acceptable.

12. Better heating at a low cost certainly depends upon improved insulation, better standards of which are imperative. More research should, therefore, be carried out in this field.

KITCHEN PLANNING

13. Should kitchens be located on (a) the shady or (b) the sunny side of the house; or is it more important that they should be adjacent to the back garden?

14. General observations on kitchen layouts are invited, especially on the sequence of equipment and on the number of doors opening into or off the kitchen.

15. Is the present range of B.S. kitchen storage fitments satisfactory for providing a convenient and compact sequence? In particular, does the present B.S. width for fitments of 1 ft. 9 in. or multiples allow sufficient flexibility for planning?

16. Should there be provision for most of the living area to be easily visible from the kitchen?

17. To what extent are meals taken in the kitchen whether or not it is planned for that purpose?

18. How far is condensation in kitchens a serious nuisance?

13. It does not seem to be of great importance whether kitchens are situated on the sunny or the shady side of the house. The housewife's preference seems to be for a kitchen facing the garden so that an eye can be kept on the children: once this requirement has been met a slight preference might be expressed for a kitchen on the sunny side.

14. Kitchen layouts should, if possible, be planned in 'U' form so that doors and circulation routes are quite clear of the working area. The kitchen should have enough wall space to take not only the initial equipment, but such additional apparatus as the occupier might purchase from time to time. Many variations of the order of equipment are possible, but the placing of the cooker near the sink and on the same wall is essential if accidents are to be minimised.

15. The present range of B.S. kitchen storage fitments forms a useful basis, but the introduction of another width in the standard range would increase flexibility of planning.

16. Where circumstances permit provision should be made for most of the living area to be easily visible from the kitchen, but this is not essential.

17. It seems to be a very general practice for breakfast at least to be taken in the kitchen.Where there is no separate dining-room, the kitchen may be used for meals to meet the objection of the smell of food lingering in the living-room.

18. Condensation in kitchens is a serious nuisance, and ventilation and anti-condensation measures are necessary particularly with present-day methods of construction and finishes.

LAUNDRY

19. How far can clothes washing in houses and maisonettes be satisfactorily undertaken in the kitchen, as opposed to a utility room? Does it make a difference if meals are taken in the kitchen?

20. In flats, where kitchen and bathroom are on the same level, it has been suggested that laundry facilities should be in the bathroom. Does this accord with your experience?

21. What are your views generally on the provision that should be made for the washing, drying, ironing and airing of clothes in multi-storey dwellings?

22. In either houses or multi-storey dwellings, is provision needed for ceiling airers, and, if so, where should they be located?

19. While the separate utility room is to be preferred the increased use of washing machines and spin dryers in the home makes laundering in the kitchen more acceptable. Moreover, the increased offer of facilities by commercial firms may well minimise the amount of laundering work to be carried out in the home.

20–22. In multi-storey dwellings it would be a considerable advantage to make provision for laundering facilities in the bathroom, but the bathroom must then be big enough to contain a washing machine.

EQUIPMENT AND FITTINGS

23. Sanitary equipment

(i) How many W.C.s are required for different sizes of dwelling?
(ii) In what circumstance should the W.C. be in a separate compartment?
(iii) Should the compartment contain a lavatory basin?
(iv) If a second W.C. is provided, what is the best location for it?
(v) How far is a lavatory basin in one bedroom desirable?

24. Kitchen equipment

For some items of equipment, should only the space, and not the equipment itself, be provided? Which should these be?

25. Plumbing

Please give general observations.

26. Electrical (lighting and power) points and gas points

Please suggest what is the desirable minimum scale of provision.

23. **Sanitary equipment.** In dwellings for five persons or more there ought to be two W.C.s. One should be in the bathroom, the other should contain a lavatory basin. Cloakroom washing facilities should be considered for the larger dwellings.

24. **Kitchen equipment.** We agree that for some items of equipment, e.g., the refrigerator, washing machine and spin dryer, the space and not the equipment itself should be provided. There would appear to be a need for study of the size of items of kitchen equipment such as refrigerators, washing machines, etc., so that these might be built in or stand within the general framework of standard kitchen fittings. At the present time there is a wide variety of shapes and sizes amongst the items of equipment which may be needed in the kitchen of the future. Research might also be undertaken into the possibility of providing a simple cold room to replace the larder and refrigerator.

25. **Plumbing.** It is essential that all plumbing should be internal and the use of the one-pipe system is recommended wherever possible.

26. **Electrical (lighting and power) points and gas points.** In our opinion the following would seem to be the minimum requirements for electrical and gas points:

	Lighting	*Socket Outlets*	*Gas*
Kitchen	1	3	3
Cooker control point	–	1	–
Living-rooms (normal)	1	3	1
Living-rooms (large)	2	3	1
Bedrooms (double)	2	2	–
Bedrooms (single)	1	2	–
Immersion heater	–	1	–
Landings	1	1	–
Hall	1	1	–

Whether provision for gas appliances will be needed in the future is a matter for conjecture.

STORAGE

27. General storage space

Please indicate how far this is at present satisfactory or inadequate (a) in houses, (b) in flats and maisonettes.

28. Pram storage

How should this best be provided (a) in houses, (b) in flats and maisonettes?

29. Fuel storage

Please indicate how far this is at present satisfactory or inadequate (a) in houses, (b) in flats and maisonettes.

30. Cupboards

How popular are built-in cupboards in rooms other than the kitchen?

27. **General storage space.** Storage space in dwellings tends to be inadequate. A generous increase in built-in cupboards is desirable, but this should not interfere with the normal living space in the room.

28. **Pram storage.** Pram storage should be no problem in houses. In multi-storey flats there are three methods which are commonly used: (1) ground-floor cubicles; (2) cubicles at each floor; (3) space within the flat.

The last method is greatly to be preferred, but is only possible in multi-storey flats if there are lifts large enough to accommodate prams. Methods (1) and (2) are not satisfactory, as such cubicles are usually badly heated and ventilated.

29. **Fuel storage.** If solid fuel (soft or hard coal) is used, storage for at least half a ton of each kind is desirable. The type of fuel which satisfies the requirements of the Clean Air Act is more bulky than the traditional type so that space requirements will accordingly be higher. It must be borne in mind that with improved alternative methods of heating, solid fuel appliances may soon become obsolete.

Oil fuel needs special arrangements, but 600 gallons is the economic minimum for a dwelling heated separately.

30. **Cupboards.** Built-in cupboards should be provided in bedrooms, where they should be additional to the usual furniture, as well as in the kitchen.

SAFETY CONSIDERATIONS

31. Experience and suggestions are invited.

31. Information on these problems is available from the Royal Society for the Prevention of Accidents and the R.I.B.A. feel that the Society's recommendations adequately cover the ground.

SOUND INSULATION

32. Experience and suggestions are invited.

32. More study is needed of the provision of adequate sound insulation between dwellings, particularly in flats. Greater consideration should also be given to the insulation of toilets, cisterns, etc. This is a matter of good planning and construction, and of economics. The efficiency of sound insulation increases in proportion to the amount of money spent. Proper planning—for instance, the avoidance of 'handed' or 'mirrored' plans and the correct positioning of opening lights—would eliminate many of the sources of annoyance in terraced houses.

REFUSE DISPOSAL

*33. **Houses***

Please give your experience of any difficulties which arise from the design of the dwelling, or group of dwellings, with any suggestions for improvement.

*34. **Flats and maisonettes***

Please give your experience of the various systems.

(1) communal chutes; (2) grouped dustbins near stair; (3) central common midden; (4) water-borne systems; (5) individual sink destructors.

Have you any suggestions for improvement over present practice, which is based largely on (1) for high blocks, and (2) for low blocks?

33. **Houses.** This question touches very much on the problem of layout. We would suggest that together with other methods, consideration should be given to the adoption of a Scandinavian method in which the dustbin is kept in a pit in the ground fitted with a specially designed hinged lid with access through a smaller opening in the centre and a pedal-operated cover for use by the housewife. This provides a neat and tidy solution to the problem of housing the dustbin, which may thus be situated even next to the front door.

With footpath access to houses, consideration should also be given to the use of a small hand trolley to transport the dustbin from house to vehicle: this trolley could have an attachment for lifting the bin where the Scandinavian method mentioned above is adopted.

Unless some solution is found to the problem of refuse collection the dustman could influence the planning of housing areas unduly for many years to come.

34. **Flats and maisonettes.** Communal chutes for high blocks and grouped dustbins near the stair for low blocks have been found to be fairly satisfactory, but it is hoped that the increased use of water-borne systems and individual sink destructors will make these methods sufficiently economical for widespread installation to be adopted.

THE CAR

35. What should be the scale at which provision is made (or planned for), and in what ways should it be done?
In particular,

36. How do you envisage providing a high ratio of garages in (a) terrace housing, and (b) housing at densities which require a proportion of multi-storey dwellings?

37. Are individual car-ports within the curtilage of a house likely to be more desirable than grouped hard standings?

38. Is the extra cost of a garage over other methods worth incurring for better protection and to get the extra storage space?

35. As stated in the commentary on Question 1, provision must be made on the basis of one car per dwelling; even this may be insufficient in some cases in the future. Car parking as distinct from short-term parking can be provided in many ways, and probably most schemes will result in a mixture of the various methods. Any approach to the problem must be flexible in the early years whilst the number of cars is steadily building up.

36, 37, 38. In terrace housing garaging can take two main forms:

(*a*) the individual garage or car park within the house or attached to it or possibly at the end of the garden; in this case the additional convenience and storage facilities can be recognised by a rent differential.

(*b*) groups of garages arranged as separate lock-ups or communal space. These groups can be integrated on the garden boundary walls or grouped in service access courts and have the advantage of flexibility in layout planning, particularly where there is separation of pedestrians and vehicles. It is of course possible in the early stages to lay down paved areas which can be rented for long-term parking and which can provide sites for future blocks of garages when the demand arises.

Consideration should also be given to the simple car-port type of roof over such areas to provide lower-rented garaging sites. Suitable plug sockets could be provided for radiator heaters. Indeed, the economics of car ownership may well lead to this form of development in the future. A well-designed roof structure carefully sited with the height kept to a minimum might well be more acceptable visually and economically than a block of garages.

Further study should also be made into the design of larger blocks of garages to form enclosed courtyards. It is possible, for instance, to plan garages around a circular courtyard, the buildings forming a screen to the service area and presenting a pleasant appearance to the surrounding areas.

Garages can also be placed on the ground floors of two-, three- and four-storey blocks of flats and maisonettes: such provision is probably inevitable at higher densities if a reasonable amount of space between buildings is to be maintained. Suitable steps can be taken to avoid nuisance from noise, and in any case it is doubtful if this is likely to be more objectionable than in cases where the garages are arranged in blocks close to the flats. With the methods described above it is possible to achieve densities of up to 80 to 85 habitable rooms per acre whilst achieving 100 per cent garaging accommodation.

In higher-density development involving lift access to dwellings other methods will have to be adopted, e.g., underground garaging, covered parking at ground level under slab blocks, or open or covered parking provided in relation to trees and ground moulding around slab and point blocks.

It is doubtful whether space can be spared for individual lock-ups in these circumstances.

In all schemes it would seem advisable to provide some workshop garages where car owners can carry out minor repairs and servicing. This would be preferable to providing bench space and electrical facilities in all or a number of garages.

PLAY SPACES FOR BLOCKS OF FLATS AND MAISONETTES

39. Experience and suggestions are invited on play spaces.

40. To what extent are private balconies necessary or desirable for children?

39. Play spaces should be provided not only in flat development, but also in groups of houses even where these have private gardens. If imaginative in design and given a wide difference in treatment, they can give a sense of locality.

The toddlers' play spaces should be small in size and scale; but unless they are related closely to groups of housing, mothers will not allow young children to use them. Designs can be relatively simple and use can be made of sand and boulders or tables and small changes in level.

Playgrounds for older children can take three main forms:

(*a*) The playground equipped with conventional apparatus, such as swings, seesaws, etc. Careful attention should be paid to the design of paving and enclosing elements and where possible existing trees should be incorporated and suitably protected.

(*b*) Playgrounds with a greater imaginative quality in which children can invent their own games. These could consist of a framing element such as an enclosing brick wall, irregular in elevation, with returns and platforms for climbing, jumping, drawing, etc.; the structure becomes, in the minds of children, a castle, a fort, a cave or a stockade. A key element could identify each play area; a boat, a car or even a cannon. Such playgrounds can cost very much less to provide than the type with fixed equipment.

(*c*) Hard areas for ball games: here some fencing and screening is usually required.

The use of junk playgrounds in special locations could also be considered, although these might be better related to larger areas of the town.

In all cases there should be uninterrupted pedestrian access for the children from house to play space.

40. The use of private balconies varies according to district and type of tenant. In some schemes they are unused, and in those circumstances the cost would have been better spent on providing more floor space, better heating, etc.

Where there is a demand balconies should be provided as in such circumstances good use is usually made of them: households with babies often put the pram out on them. They are only of limited use for children's play.

FORMS OF ACCESS FOR FLATS AND MAISONETTES

41. Experience is invited on the various forms of access.

42. To what extent is balcony access, especially for high blocks, likely to be superseded by enclosed forms of access?

43. At what height of block should a passenger lift be provided, and at what height should alternative lift service be provided?

41, 42, 43. Staircase access should be restricted to not more than two-storey heights of stairs, i.e., three-storey blocks of flats or four-storey blocks of maisonettes. Above this level lifts should be provided. Balcony access is generally unsatisfactory unless the balcony can adopt the character of an elevated street, but this form might be considered to be unsuitable in our climate. Internal corridor access (as used, for example, with 'cross over' maisonettes) has the following advantages:

(*a*) it often allows for more compact planning, more economical block shape and less circulation area;
(*b*) it gives better protection from the elements than access galleries;
(*c*) it gives greater privacy than access galleries.

This form of access can be quite satisfactory, especially if there are external views at the ends of the corridor and possibly at intermediate points.

OTHER MATTERS

44. Please deal with any other topic which you would like to cover.

44. It is appreciated that the Sub-Committee is concerned with housing standards, but in the R.I.B.A.'s view these matters cannot be fully considered except as one element in the comprehensive study of housing design. This subject covers all aspects of house planning and environment and must include the relationship of the individual dwelling unit to the housing area. It will also be affected by the larger questions of town planning. It is obvious that matters such as access, refuse disposal and garaging cannot be dealt with fully unless layout is also considered. The design of the individual house should bear a much closer relationship to the form of layout than has been apparent in the past.

The fundamental problem today is to obtain the maximum separation of pedestrians and vehicles and this should apply as much in the housing areas as with other forms of development. An integrated footpath system in an area, and preferably in a town, provides a basic solution but produces its own particular problems affecting house design.

Further research and study is needed on the use of the Radburn type layout at higher densities since this has the advantage of providing reasonable facilities for car access to the house and at the same time produces the maximum protection to the pedestrian. In this connection it is felt that the use of the wide-frontage house should be investigated since this type of plan simplifies the provision of a through circulation space with suitable entrances on either side and also permits the adoption of a single aspect plan ensuring maximum privacy to the occupants of the house and garden.

Too little regard has been paid to the relationship between garden and house and to the essential quality of privacy which is required. This cannot be achieved by fixing minimum distances between terraces of houses but rather by complete integration of house design and layout. The use of patio and single-aspect-type houses merits further consideration in this connection.

Housing layout is often affected detrimentally by 'space about buildings' regulations, and the R.I.B.A. feel that these matters should not be judged by rules which have now become arbitrary in effect or are based on preconceived ideas of layout.

It is assumed that the results of work carried out by the Housing Development Group at the Ministry of Housing and Local Government will be published from time to time, but it should be remembered that a great deal of experimental work on large and small elements of house design is being undertaken by authorities in various parts of the country. It would be a great benefit if evidence of such work could be collected centrally by the ministry and the results published in Housing Bulletins. Such publication could lead to greater advances in housing design.

PRIORITIES

45. For any of your suggestions for improvement which are likely to cost more money, would you please list them in your order of importance?

45. The most essential improvement in our view would be the provision of adequate heating systems in houses.

After this, space is the next immediate problem: the provision of equipment either at the time of construction of the houses or by the tenant at a later stage is really one aspect of the design of the space provided. After these improvements in the design of the house have been made any further expenditure should be devoted to better landscaping.

STANDARDS GENERALLY

46. The Sub-Committee would be glad of any suggestions you may care to make on how the future standards can best be formulated without imposing undesirable restrictions upon freedom of internal planning.

46. Future standards should be formulated in terms of the overall house area, possibly with a range of figures covering each particular house size on the basis of the number of persons to be housed. Such a range would enable an authority to provide the kind of housing best suited to its particular needs. It is suggested that the detailed allocation of space could then be made within the overall figure and be considered in the light of some form of 'performance test' which could be applied to the design to ensure its adequacy.

This test might be similar to that applied by the Ministry of Housing in Denmark in which house plans must show the disposition of furniture in rooms to ensure a suitable functional basis for the use of the room. Such standards are, in fact, laid down in Direction No. 31 issued by the Danish National Institute of Building Research (Statens Byggeforsknings-institut).

It would also appear to be reasonable that cost aspects of housing should be considered in a rather more scientific way than at present. Further study is needed on this subject, but ranges of target costs expressed in relation to the number of persons to be housed or the size of house should be formulated. Such a practice would give the architect every encouragement to plan to achieve the greatest value from the money to be expended. This method has been particularly successful in school building, and although problems in housing are somewhat different an attempt should be made to work out a suitable method whereby the best value for money may be obtained for all concerned.

Book Reviews

The Weather Conditioned House, by *Groff Conklin.* 11¼ in. 252 pp., illus. New York: Reinhold. 1958. £5 18*s.*

Heating and air conditioning are household subjects in the United States where about two dozen official, professional and trade organisations demonstrate their interest in making the householder comfortable by a thorough service of codes and manuals, leaving the individual writer on the subjects with little alternative but to quote. A book so liberally laced with quotation as *The Weather Conditioned House* could well be tiresome but the author, combining experience as a thermal engineer with that as a professional anthologist, has produced a commentary on the established literature that is orderly and full of interest.

He starts on the now familiar line of a code of practice in which the functional requirements necessary for human comfort, and the means of satisfying them, are listed one by one. Then, in more detail, he relates the natural environment—climate, orientation and building site—to the seasonal behaviour of heat and moisture and thence to the mechanics of heating, ventilating and cooling. There are final sections, thrown in for good measure but somewhat out of place, on sound control and the prevention of decay, infestation and fire. The arguments in the book are supported extensively by quoted statements, charts and tables from sources beyond question beside which the author's own technical contributions—especially on the principles of heat and moisture transfer—are unfortunately not faultless or always clear. However, had Mr. Conklin the kind of mind trained to accuracy and clarity in these details, he might not have succeeded in handling the general mass of technical material as felicitously as he does here.

The most startling impression the book gives is of a formidable technology that can provide year-round comfort for the householder whether he contrives to make the best and ameliorate the worst of his natural surroundings or whether he treats them as if they did not exist. This is a characteristically American situation for which of course there is yet no British counterpart and the British reader, though he may gain by being reminded of the principles set down, cannot expect to apply much of the detailed information to his own problems.

J. CHURTON [*A*]

Turkish Islamic Architecture in Seljuk and Ottoman times 1071–1923, by *Behçet Ünsal.* 7½ in. 124 pp. + 130 illus. Tiranti. 1959. £1 10*s.*

This modestly priced book deals comprehensively with the architecture of the Seljuk and Ottoman times in Anatolia and Europe up to the time of the Turkish revolution, and sets out the achievements of individuals, such as the great Sinan (a biography of whom was published in 1954[1]) in relation to their background. It is illustrated by numerous clear plans in the text and by photographs and drawings at the end. It is authoritative too, and can be generally recommended. The author is an architect and Professor of the History of Architecture at the Academy of Fine Arts, Istanbul.

The contents include an excellent bibliography and short biographical notes of leading Turkish architects.

CECIL J. SEARLE [*A*]

[1] *Sinan der Baumeister osmanischer Glanzzeit,* by Ernst Egli. Erlenbach–Zürich and Stuttgart: Verlag für Architektur.

Guide to Western Architecture, by *John Gloag.* 9⅞ in. xviii + 407 pp., illus., + 32 plates. George Allen and Unwin. 1958. £3 3*s.*

John Gloag's approach to architecture is unhappily still a rather rare one among laymen. He regards it as the supremely important social art, the mirror of a nation's civilisation, and of a people's quality and character—not as a mere intellectual exercise in the building styles. Most architects probably share this view, but they lack his eloquence. I hope, however, that they value him, as they certainly should, as their most expert and articulate champion.

This is perhaps the most ambitious of his many excellent books, and I do not believe that the story of western architecture —and it is the whole story, too, from Theodorus of Samos to Le Corbusier— has ever been better told. It is a beautifully organised book, written with unflagging zest and genuine knowledge, and with those sudden flashes of critical insight which reveal an acutely perceptive mind. Of course, there are shortcomings: a few errors of fact have crept in and, for my taste, there is a little too much expatiation on Georgian grace and elegance. No doubt, also, insufficient attention is given to structural techniques to make the book entirely acceptable to students at architectural schools as a basic reference source. But for general reading, whether for architects, students or laymen, I can think of nothing so good.

Hilton Wright's many drawings in the text are charming, and there are a large number of reproductions from the standard works and old prints. Not all the photographs are worthy of a volume of such high standards.

J. C. P.

Structures, by *Pier Luigi Nervi.* 10 in. 128 pp. incl. illus. New York: F. W. Dodge Corporation. 1956. $6.95.

Published first in Italian in 1955 under the title of *Costruire Correttamente* (Milan: Hoepli), this compact and exceedingly informative book summarises Professor Nervi's vast practical knowledge of reinforced concrete design amassed over a period of thirty years, and in particular his more recent experience with thin shell structures in *Ferro-cemento,* a material of his own invention. The very competent translation is by Mario Salvadori, Professor of Civil Engineering at Columbia University, New York, and his wife. Many illustrations are provided, and they are clear and helpful.

Planning the Farm to Save Labour, by *F. G. Sturrock and G. H. Brayshaw.* Farm Economics Branch Report No. 47. 10¾ in. 52 pp., illus. 1958. 4*s.* 6*d.* post free from Farm Economics Branch, School of Agriculture, Cambridge.

This extremely informative, practically arranged and well illustrated report summarises an investigation (to which some four years were devoted) into farm building design and work methods for livestock.

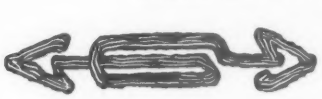
The Work of the Public Health Engineer (3rd edition of The Work of the Sanitary Engineer, based on the original book by Arthur J. Martin), rewritten and enlarged by *L. B. Escritt* and *S. F. Rich.* 11 in. 823 pp. incl. 297 plates and illus. Macdonald and Evans. 1959. £3 15*s.*

This third edition of a well-known textbook will be welcomed by local authority staff, architects and others, since the last edition was published more than ten years ago. Revision takes the form mainly of addition (rather than subtraction or substitution) to both text and illustration. The synopsis of seven parts remains unchanged—Introductory, Law and Administration, Water Supply, Sanitation of Buildings, Sewerage and Land Drainage, Sewage Treatment and Disposal, Public Cleansing.

The text is well written, suitably set out and fully indexed. Drawings are generally good, though a few are of too small scale (all too common in textbooks). Apart from a well-illustrated jacket photographs are mainly of poor to moderate quality and sometimes uninformative; half the number of photographs well reproduced and annotated would be of greater value.

New products, such as polythene waterpipes and pitch-impregnated fibre drainpipes, are included and British Standard Specifications are referred to, but it seems a pity that no reference is made to appropriate Codes of Practice published during the last ten years: nor are their recommendations always followed. Although allowing that local authorities cannot adopt the experimental outlook in matters concerning public health, we are shocked to see single-stack plumbing described as 'one of various substandard methods of construction' and not deemed worthy of illustration. Advertisements are out of place in a book of this price.

ANTHONY MEDLYCOTT [*F*]



Notes and Notices

NOTICES

Fifth General Meeting, Tuesday 8 March 1960 at 6 p.m. The Fifth General Meeting of the Session 1959–60 will be held on Tuesday 8 March 1960 at 6 p.m. for the following purposes:

To read the Minutes of the Fourth General Meeting held on Tuesday 2 February 1960; formally to admit new members attending for the first time since their election.

Mr. W. A. Allen, B.Arch.(Manitoba) [*A*], to read a paper on 'The Profession in Contemporary Society.' (Light refreshments will be provided before the meeting.)

Annual Discourse, Thursday 10 March 1960 at 6 p.m. The Annual Discourse entitled 'Architecture in Evolution' will be given by Dr. C. A. Doxiadis on Thursday 10 March 1960 at 6 p.m.

Sixth General Meeting, Tuesday 22 March 1960 at 6 p.m. The Sixth General Meeting of the Session 1959–60 will be held on Tuesday 22 March 1960 at 6 p.m. for the following purposes: formally to admit new members attending for the first time since their election.

Mr. Peter Trench, O.B.E., T.D., B.Sc., Director, The National Federation of Building Trades Employers, to read a paper on 'Thinking Ahead about the Building Industry.' (Light refreshments will be provided before the meeting.)

Discussion Evening, Tuesday 29 March 1960 at 6.30 p.m. There will be a discussion on 'Design and Costs' on Tuesday 29 March 1960 at 6.30 p.m. Members are invited to submit questions they would like to put to a panel of speakers at the meeting, on postcards addressed to The Management Committee, R.I.B.A., *to arrive not later than* 20 *March* 1960. (Buffet refreshments on sale from 5.30 p.m.)

Seventh General Meeting, Tuesday 5 April 1960 at 6 p.m. The Seventh General Meeting of the Session 1959–60 will be held on Tuesday 5 April 1960 at 6 p.m. for the following purposes:

To read the minutes of the Sixth General Meeting held on Tuesday 22 March 1960.

To present the Royal Gold Medal to Professor Pier Luigi Nervi (Italy). (Light refreshments will be provided before the meeting.)

Session 1959–1960. Minutes IV. At the Fourth General Meeting of the Session 1959–1960, held on Tuesday 2 February 1960 at 6 p.m., Mr. Basil Spence, O.B.E., T.D., A.R.A., A.R.S.A., President, in the Chair.

The meeting was attended by about 220 members and guests.

The Minutes of the Third General Meeting of the Session held on Tuesday 5 January 1960 were taken as read, confirmed and signed as correct.

The President delivered his address to architectural students and Mr. Philip Powell, O.B.E., A.A.Dipl. [*F*] read his review of the work submitted for the Prizes and Studentships, 1960.

On the motion of Sir Hugh Casson, M.A., R.D.I. [*F*], seconded by Mr. Anthony A. Part, C.B., M.B.E., Under-Secretary, Ministry of Education, a vote of thanks was passed to Mr. Philip Powell, and was briefly responded to by him.

The presentation of prizes was then made by the President in accordance with the Council's award.

The proceedings closed at 7.15 p.m.

Election Void. Under the provisions of Bye-law 17 the election as Associate of the following has been declared void: Mr. Edward Arthur Alden.

R.I.B.A. Kalendar 1959–60. Corrections. In the new edition of the Kalendar, the following errors occur:—

Page 86.—The entry A 1952 **Eckershall: Leslie** (13700) should read A1952 *Eckersall: Leslie* (13700).

Page 185.—The telephone number of **Mr. John Roland Sidwell** [*A*] should read *Coventry* 22393/4.

Page 189.—The address of **Professor William James Smith,** M.C., F.S.A. [*F*] (2827), should read *5 Campbell Drive, Bearsden, Glasgow.*

Page 189.—The address of **Mr. William John Smith,** Dip.T.P.(Lond.) [*A*] (5436), should read: *15 Guessens Road, Welwyn Garden City, Herts.*

Page 191.—The address of **Mr. Charles Gordon Alexander Steele,** D.A.(Edin.) [*A*] (10673) should read: *Cheyneys Lodge, Ashwell, Baldock, Herts* (*Steeple Morden* 210).

Page 198.—The address of **Mr. Peter Thimbleby** [*A*] (14495) should read: *National Provincial Bank Chambers,* 4 *Market Place, Rugby* (*Rugby* 4513).

British Architects' Conference, Manchester, 15 to 18 June 1960. The British Architects' Conference in 1960 will be held at Manchester from 15 to 18 June, at the invitation of the Manchester Society of Architects. Full details of the programme will be issued with the April number of the JOURNAL. Particulars of accommodation in hotels is given below.

BRITISH ARCHITECTS' CONFERENCE, MANCHESTER, 15–18 June 1960

The Conference Committee have made provisional reservation of accommodation at the following hotels for members attending the Conference. *Early application must be made to the hotels mentioning the British Architects' Conference*, as they will not guarantee reservations later than the end of March.

Hotel	*A.A. Category*	*Rooms*				*Approx. Charges Bed and Breakfast*	*Distance from City Centre*
		Double	*Twin Bedded*	*Three Bedded*	*Single*		
Manchester							
(C) Grand Hotel, Aytoun Street, Manchester 1	4 Star	6	—	—	—	From 50/–	—
(C) Midland Hotel, Peter Street, Manchester 2	4 Star	100 (including twin bedded)		2	60	From 51/–	—
(C) Queen's Hotel, Piccadilly, Manchester 1	—	40	—	—	20	From 49/6	—
(C) Mitre Hotel, Cathedral Gates, Manchester 3	2 Star	—	6	—	6	From 27/6	—
(U) Lansdowne Hotel, 346 Wilmslow Road, Manchester 14	—	—	5	—	5	From 25/–	2 miles
Sale							
* Brooklands Hotel, Brooklands	2 Star	—	4	—	4	From 25/– + 10%	6 miles
Timperley							
* Woodlands Hotel, Wellington Road	—	—	—	—	10	From 30/– + 10%	6 miles
Stockport							
* Alma Lodge Hotel, Buxton Road, Mile End	—	—	7	—	20	From 37/6	7 miles
Alderley Edge							
* Queen's Hotel	3 Star	—	15	—	—	30/– to 35/–	14 miles
Knutsford							
* Royal George Hotel, King Street	3 Star	1	5	—	3	From 27/6 + 10%	16 miles

Hotels marked (U) are unlicensed.
Hotels marked * have garage accommodation or private parking.
Hotels marked (C) have garage accommodation near the hotel.

Classes of Retired Members. Under the provisions of Bye-law 15 applications may be received from those members who are eligible for transfer to the class of 'Retired Fellows', 'Retired Associates' or 'Retired Licentiates'.

The Bye-law is as follows: 'Any Fellow, Associate or Licentiate who has reached the age of 55 and has retired from practice may, subject to the approval of the Council, be transferred without election to the class of "Retired Fellows", "Retired Associates", or "Retired Licentiates", as the case may be, but in such case his interest in, or claim against the property of the Royal Institute shall cease.

'The amount of the annual subscription payable by such "Retired Fellow", "Retired Associate", or "Retired Licentiate" shall be one guinea, or such amount as may be determined by resolution of the Council, excepting in the case of those who have paid subscriptions as full members for 30 years, and who shall be exempt from further payment. A "Retired Fellow", "Retired Associate", or "Retired Licentiate" shall have the right to use the affix of his class with the word "Retired" after it, shall be entitled to receive the JOURNAL and Kalendar, shall be entitled to the use of the Library, and shall have the right to attend General Meetings, but shall not be entitled to vote. A "Retired Fellow", "Retired Associate", or "Retired Licentiate" shall not engage in any avocation which in the opinion of the Council is inconsistent with that of architecture. Nothing contained in this Bye-law shall affect the rights of persons who at the date of the passing of this Bye-law are members of the classes of "Retired Fellows" and "Retired Members of the Society of Architects".'

Associates and the Fellowship. Associates who are eligible and desirous of transferring to the Fellowship are reminded that as from 1 January 1956 all candidates for the Fellowship will be required to submit to the Fellowship Examiners drawings and photographs or examples of work. Candidates may also be required to attend for an interview, which may however be dispensed with at the discretion of the Fellowship Examiners. The necessary nomination forms may be obtained from the Secretary, R.I.B.A.

Licentiates and the Fellowship. By a resolution of the Council passed on 4 April 1938 all candidates whose work is approved are required to sit for the Examination, which is the design portion of the Special Final Examination, and no candidates will be exempted from the Examination.

Note.—The above resolution does not affect Licentiates of over 60 years of age applying under Section IV, Clause 4 (*c*) (ii) of the Supplemental Charter of 1925.

Members' Luncheon Room. A Members' Luncheon Room is now open on the sixth floor and is run on a largely self-service basis. The price of luncheon for members and Students is 4*s.* and guests may be introduced. Luncheon service is available from Mondays to Fridays inclusive between 12 noon and 2 p.m. and there is a 'club licence'.

Luncheon vouchers, issued through Messrs. Luncheon Vouchers, Limited, will be accepted, as also will any vouchers issued privately by members in private practice to members or Students in their employment, if special arrangements are made.

Morning coffee and afternoon tea can be ordered between 10 and 11 a.m., and 3.30 and 5 p.m. respectively. This service will be provided in the sixth-floor Luncheon Room.

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. Final Examination, November–December 1959. The R.I.B.A. Final Examination was held in London, Leeds, Manchester, Newcastle, Edinburgh and Belfast from 25 November to 4 December 1959. Of the 293 candidates examined, 144 passed as follows:—

Passed Whole Examination	97
Passed Whole Examination subject to approval of Thesis	1
Passed Part 1 only	46
	144

149 Candidates were relegated.

The successful candidates are as follows:—

Whole Examination

Ashdown: Donald
Bamber: Robert
Banfield: C. G.
Barker: D. J. (Distinction in Thesis)
Black: F. P.
Bonnett: D. J.
Boyd: W. B. P.
Braithwaite: Peter (Distinction in Thesis)
Briggs: C. A.
Brooks: J. G.
Broom: Arthur
Bryant: Richard
Bulmer: F. L.
Champion: E. F. J.
Chow: David
Choyce: G. A.
Clark: D. F.
Clarke: A. C.
Condie: W. E. M.
Coombes: A. F.
Counsell: J. G.
Cousens: J. R.
Craston: D. M. (Distinction in Thesis)
Curtis: R. E.
Dale: A. K.
Daly: T. S.
Dane: Ian
De Vulder: J. E.
Eyre: T. C.
Farmer: M. J.
Field: A. J. H.
Fleming: Mrs. E. M.
Fullarton: J. H.
Garnett: D. J. R.
Golding: L. A. J.
Graebe: David
Griffiths: J. E. D.
Hall: J. C.
Harris: E. G.
Herman: Abraham
Hills: N. R.
Hodgson: R. T.
Honigsfeld: M. J.
Howarth: B. P.
Jackson: Miss V. J.
John: G. R.
Joyce: M. R.
Kaye: Clifford
Kennedy: D. K.
King: P. G.
Lloyd-Davies: A. E.
Loban: C. M.
Loney: R. M.
Lowe: P. F.
Lunn: Clifford
Manger: C. E.
Mbanefo: F. N.
Messom: E. L.
Moody: D. G. A.
*Mortimer: K. C.
Mowbray: R. B.
Nesbitt: J. A.
New: M. S. M.
Nicholls: A. D.
Packman: B. H.
Parkinson: Cyril
Patterson: V. I.
Porter: D. K.
Powell: B. E.
Power: E. C.
Power: Gerard
Prestwich: R. E.
Prosser: T. W.
Raine: Alan
Rawson: K. J.
Rendle: D. E.
Roebuck: E. A.
Roger: R. D. W.
Roseberg: M. A.
Routledge: J. H.
Senior: D. J.
Sharman: A. E.
Smith: Colin S.
Smith: Cyril A. (Distinction in Thesis)
Swanson: M. B.
Taylor: D. G.
Tevendale: P. A.
Thompson: R. B. G.
Turnbull: J. K.
Tyrer: Henry
Vanezis: Christopher
Van Oostrum: W. L.
Warner: Brian
Whittaker: Donald
Wilson: W. R.
Woodman: R. E.
Woods: Bilham
Woodward: J. F.

* Subject to approval of Thesis.

List of successful candidates who sat for Part 1 only.

Bates: Donald
Bird: Cyril
Bragg: A. G.
Brown: I. K.
Collins: J. A.
Cooper: Brian
Davis: D. O.
Dible: J. K.
Dyer: B. F.
Eaves: P. J.
Ellis: R. G.
French: P. J.
Gardham: C. B.
Gibson: W. A.
Green: F. G. J.
Haryett: John
Hawkins: G. J.
Hopkins: J. M.
Isaac: A. R. G.
Johnson: J. C.
Kiss: Imre
Longfield: M. B. K.
Manners: D. A.
Merriman: P. C.
Morris: G. M.
Newton: D. H.
Pearson: J. E.
Philip: D. S.
Pickles: Albert
Pratt: A. J.
Prochnik: H. E.
Rawson: F. K.
Renhard: J. T.
Riches: Miss M. R.
Rickman: Percy
Sergeant: R. H.
Simpson: Douglas
Simpson: Norman
Simpson: R. G.
Sizer: J. F.
Stonehewer: Allan
Topaz: C. A.
Tyrrell: M. J. W.
Watkins: David
Wilson: Roger
Wrench: David

R.I.B.A. Special Final Examination, November–December 1959. The R.I.B.A. Special Final Examination was held in London, Leeds, Manchester, Newcastle, Edinburgh and Belfast from 25 November to 4 December 1959. Of the 150 candidates examined, 40 passed as follows:

Passed Whole Examination	36
Passed Part 1 only	4
	40

110 candidates were relegated.

The successful candidates are as follows:—

Whole Examination

Barton: A. J. E.
Barton: H. C.
Beale: Charles
Beattie: W. E.
Botting: E. K.
Bourne: K. B.
Clerici: S. S.
Clulow: F. N.
Cowland: S. G.
Cox: E. H.
Deeley: R. W.
De Giorgio: Roger
Degler: Z. C.
Farrer: J. R.
Finch: M. R.
Franks: F. D.
Graham: R. C.
Groves: G. M. L.
Hall: C. S.
Jennings: S. H.
Jessamy: P. H.
Kennedy: James
Lees: V. H.
Long: R. W.
Miller: H. A.
Price: Sydney
Rush: P. G. C.
Shepherd: Mrs. Betty
Simpson: J. K.
Singleton: D. R.
Stovin-Bradford: F. R.
Straton-Ferrier: J. M.
Subiotto: Mrs. A. E.
Udy: D. A.
Wallnutt: E. W.
Wenczek: E. B. O.

List of successful candidates who sat for Part 1 only.

Lutomski: Miroslav
Perry: K. R.
Shaw: R. G.
Townsend: D. C.

COMPETITIONS

New Civic Buildings, Neath. The Neath Borough Council and the Neath R.D.C. invite Registered Architects to submit designs in competition for new Civic Buildings, comprising Offices, Council Chamber and Public Hall to be erected at Fairfield, Neath.

Assessor: Sir Percy Thomas, O.B.E. [*Past President*].

Premiums: £1000, £500, £300.

Last day for submitting designs: 29 October 1960.

Last day for questions: 2 May 1960. Conditions may be obtained on application to Mr. D. King Davies, Town Clerk, Town Hall, Neath, or to Mr. J. H. K. Thorne, Clerk of the Council, Orchard Chambers, Neath, *not later than* 12 *noon on Saturday* 12 *March.* Deposit £2 2*s.*

Burgh of Dumbarton Architectural Competition: Central Area Redevelopment. The Town Council of the Royal Burgh of Dumbarton invite architects resident in the United Kingdom to submit designs for an area of 40 acres for redevelopment primarily for commercial use, in the centre of the Burgh.

Assessor: Professor R. H. Matthew, C.B.E., M.A. [*F*].

Premiums: £1,200, £900, £500.

Last day for submitting designs: 30 May 1960.

Conditions may be obtained from the Town Clerk, Municipal Buildings, Dumbarton. Deposit £2.

An applicant for the conditions must state his registration number.

County Council of Dunbarton: New County Council Offices. Dunbarton County Council invite architects practising or resident in Great Britain and Northern Ireland to submit designs for County Council Offices on a site fronting Route A.82 at Crosslet, Dumbarton.

The competition will be run in two stages, the six successful competitors at the first stage taking part in the second stage. Each of these six competitors will receive the sum of £400 and the premium for the design placed first will be £1,500.

Last day for submitting designs in the first stage: 30 July 1960.

Last day for questions: 31 March 1960.

Conditions may be obtained from the County Clerk, County Buildings, Church Street, Dumbarton. Deposit £2 2*s*.

An applicant for the conditions must state his registration number.

New Hospital at Boston, Lincolnshire. The Sheffield Regional Hospital Board invite architects resident in Great Britain, Northern Ireland and Eire to submit designs in competition for a new hospital of some 474 beds, with the usual ancillary departments, to be erected at Boston, Lincolnshire. The competition will be conducted in two stages, the preliminary stage comprising sketch plans to a small scale showing general layout, massing and composition of the scheme. From the competitors taking part in the preliminary stage the Assessor will select six to prepare more detailed schemes for the final stage. Each of these six selected competitors will receive a premium of £500 and the author of the winning design a further premium of £1,500.

Assessor: Mr. J. Murray Easton [*F*]

Conditions may be obtained on application to Mr. Leonard W. Faulkner, Secretary to the Sheffield Regional Hospital Board, Fulwood House, Old Fulwood Road, Sheffield 10. Deposit £2 2*s*.

An applicant for the conditions must state his registration number.

Workshop Design Competition. The Warwickshire Rural Community Council invite Students of the Royal Institute and students attending recognised schools of architecture to submit designs in competition for a small factory for light industry situated in small country towns and villages.

Assessors: Mr. J. Cosmo Clark, C.B.E., Director, Rural Industries Bureau, Mr. J. M. Knowles, A.M.T.P.I. [*F*], Consultant Architect, Rural Industries Bureau, and Mr. Eric Davies, A.M.T.P.I. [*A*].

Premiums: £50, £25, £10.

Last day for submitting designs: 12 noon, 23 April 1960.

Conditions may be obtained from the Secretary, Warwickshire Rural Community Council, Midland Bank Chambers, 126 The Parade, Leamington Spa.

The Westminster City Council intend to promote an architectural competition for redevelopment for housing purposes of a site bounded by Vauxhall Bridge Road, Churton Street, Tachbrook Street and Rampayne Street, having a total area of about 13 acres.

Assessor: Mr. Philip Powell, O.B.E., A.A.Dipl. [*F*].

Particulars will be published during May or June 1960.

Residential Development at Highfields, Halesowen, Worcestershire. Last day for submitting designs: 31 March 1960. Full particulars were published in the JOURNAL for November, page 28.

Metropolitan Cathedral of Christ the King, Liverpool. Full particulars were given in the JOURNAL for September, page 404, but in addition it should be noted that *corporate members of the overseas societies allied to the R.I.B.A.* are also invited to compete.

Last day for submitting designs: 4 p.m. on 3 August 1960.

Extension to County Buildings, Edinburgh Last day for submitting designs: 15 March 1960. Full particulars were published in the JOURNAL for October, page 442.

International Competition for the development of the town of Tunis. Final closing date is in October 1960. Full particulars were given in the JOURNAL for February, page 144.

COMPETITION RESULT

Competition for Shopfront Designs

Part (*a*)*:*

1. (£200) Leonard Daniels [*A*].
2. (£75) Christopher Read [*A*].
3. (£25) David H. White [*Student*].

Commended: Malcolm G. Baird.

Part (*b*)*:*

1. (£200) R. C. Burley [*Student*].
2. (£75) D. C. W. Vane [*A*] and G. D. Baker [*A*].
3. (£25) Leonard Daniels [*A*].

Commended: James Harbinson; D. C. W. Vane [*A*] and G. D. Baker [*A*].

ALLIED SOCIETIES

Changes of Officers and Addresses

Hull and District Chapter, York and East Yorkshire Architectural Society. Chairman, C. E. Tooley, D.S.C. [*L*], Hon. Secretary, Robert Linacre [*Student*], 170 Westfield Road, Hull.

North Staffordshire Architectural Association. President, G. L. Greaves [*A*].

Hong Kong Society of Architects. President, W. Szeto, B.Sc., M.I.C.E., P.O. Box 2192, Hong Kong. Hon. Secretary, B. C. Penman [*A*], c/o E. B. Cumine, Esq., Embassy Court, Hong Kong.

Nottingham, Derby and Lincoln Society of Architects. Dinner and Dance. The Society held a dinner and dance on 11 December at Nottingham University. The President of the Society, Mr. E. H. Ashburner [*F*] was in the chair. Mr. Basil Spence, President R.I.B.A., was among the guests, and in his speech he congratulated the County Architect's department on the fact that Nottinghamshire is to represent the whole country at the Milan world exhibition in July with a model school. He put forward the suggestion that Nottingham should appoint a city architect. Mr. Spence presented a bronze medal to Mr. W. D. Lacey [*A*], Nottinghamshire county architect, in honour of his department's work in designing Tuxford County Secondary School. Alderman W. Bayliss, chairman of Notts. County Council, also received a medal, and Mr. M. D. Sweeney, representative of the contractors, was presented with a diploma. Mr. Lacey spoke of the enthusiastic team work he had from members of his department.

Royal Institute of the Architects of Ireland. Election of Council and Officers 1960. The following officers have been elected: President: Mr. Harry S. Robson [*A*]; Vice-President: Mr. Eamonn O'Byrne; Hon. Secretary: Mr. Oscar Richardson; Hon. Treasurer: Mr. James F. Green; Council: Mr. Basil Boyd Barrett, Mr. Luan Cuffe, Mr. J. A. Douglas, Mr. Alan Hope [*A*], Mr. W. H. D. McCormick [*A*], Mr. Niall Montgomery [*A*], Mr. Dermot O'Toole, Mr. F. Rogerson [*A*], Mr. Dermot Smyth [*A*], Mr. Wilfrid Cantwell [*F*] (Representative of the Architectural Association of Ireland), Mr. William A. Maguire [*F*] (Representative of the Architectural Graduates' Association).

GENERAL NOTES

Leverhulme Travel Grant to Brazil. A travel grant or grants from the trustees of the Leverhulme Foundation has been offered to British architects to enable the holder to work for a period of at least a year on the planning or building of the new federal capital of Brazil.

1. Applications are invited from:

(*a*) corporate members of the R.I.B.A. of either sex, and

(*b*) students who have passed the R.I.B.A. Final Examination, Parts 1 and 2 (or have been exempted from them) and who have had at least two years' practical experience.

2. Applicants should be not less than twenty-one or more than thirty-five years of age, should be keen to visit Brazil, and able to spend a minimum of twelve months there in travel, study and practical work. Arrangements will be made for a period to be spent in the planning office at Rio de Janeiro (under the direction of Lucio Costa) or the site office at Brasilia (under the direction of Oscar Niemeyer), or both. A normal salary will be paid in Brazilian cruzeiros during this office period; but as salary scales in Brazil for work of this kind are comparatively low, awards of approximately £1,000 are being offered to supplement this salary and to allow for additional travel expenses as well. Married applicants are not barred; but the award is not intended to cover the total expenses of two people.

3. Although a few officers of NOVACAP (the New Town Corporation) can speak English, the holder of the award will have to acquire a rough working knowledge of Brazilian Portuguese in order to make his way round the office and understand drawings, notices, etc.

4. In order to be considered for this award, applicants should write a letter, in type or manuscript, to the Secretary, R.I.B.A., to reach him on or before 28 March 1960, marking the envelope 'Leverhulme Travel Grant'.

In this letter the applicant should state:

(*a*) why he is particularly interested in going to Brazil and working on the plans or designs for the federal capital. (A short paragraph will suffice, and it should not in any case be longer than two hundred words.);

(*b*) his age, qualifications, experience and special interests;

(*c*) brief particulars of any prizes or other

awards gained; the title of any thesis he has produced, writings he has published, or buildings he has designed;

(d) his willingness to travel to Brazil as soon as possible after 30 April 1960, and not later than the end of October 1960;

(e) the names of three referees from whom inquiries could be made about the applicant's character and professional abilities, one of whom should *not* be an architect.

Applicants may be interviewed.

Applications will be considered by a special committee appointed by the Council of the Royal Institute of British Architects.

The successful applicant will be required to present a short report on the results of his tenure of the scholarship.

Bernard Webb Studentship. The Bernard Webb Studentship for the historical and critical study of architecture, which is open to members of the Architectural Association and tenable under the auspices of the British School at Rome, has been awarded to Mr. Anthony J. Wylson, A.A.Dipl. [*A*], for a study of the relationship of traditional craftsmanship and industrial techniques in the development of Italian architecture as from the turn of the century.

Cost Control Conference. Applications are invited from members for a further conference on methods of the control of the building costs at the design stage, which is to be held at Nottingham University from Friday 25 to Sunday 27 March 1960.

The conference, which is sponsored by the Cost Research Liaison Committee of the R.I.B.A. and the Royal Institution of Chartered Surveyors, will be on the same lines as those already held at Great Missenden, Bristol, York and Manchester. The conference arrangements are being made jointly by the R.I.B.A. and the Nottingham, Derby and Lincoln Society of Architects. It is primarily intended for the Midlands region, and it is unlikely that there will be a further conference in this area.

Applicants for the conference, which is residential, are asked to write to W. L. Dunn, Esq., F.C.A., Messrs. Chamberlain and Merchant, Park House, Friar Lane, Nottingham, not later than Monday 10 March. Please state your age, professional or other qualifications, where you work and in what capacity and what, if any, experience you have in the application of cost control methods. The conference fee is eight guineas inclusive of accommodation.

Details of the programme will be announced later.

Harvard University: The Graduate School of Design. Beginning in the academic year 1960–61 the Graduate School of Design, Harvard University, will offer an advanced interdepartmental programme in Urban Design, open only to selected candidates from among those who already hold one of the School's first professional degrees (B.Arch., M.L.A., or M.C.P.), or who are deemed to have had elsewhere an equivalent preparation. The programme will require a minimum of one year's study in residence and will lead to the degrees Master of Architecture in Urban Design, Master of Landscape Architecture in Urban Design, or Master of City Planning in Urban Design, depending upon the profession in which the candidate already holds his degree and through which he comes to the curriculum in Urban Design.

For application forms and further details apply to the Committee on Admissions, Graduate School of Design, Robinson Hall, Harvard University, Cambridge 38, Massachusetts.

U.S.S.R. Study Tour. The Town and Country Planning Association is arranging a special study tour in the Soviet Union for members and their friends interested in town and country planning, town development, building and architecture.

The tour will last for 14 days (10–24 June 1960), and will include Moscow, Leningrad and Kiev.

The basic tour fee is £149, with a special reduction of £10 for individual members of the association.

Further details are now available from the Tour Secretary, T.C.P.A., 28 King Street, W.C.2.

I.F.L.A. Congress 1960. The International Federation of Landscape Architects are holding a three-day congress at Amsterdam on 20, 21 and 22 June. The congress will be followed by a programme of excursions through the Netherlands.

The Honorary President of the I.F.L.A. is Mr. G. A. Jellicoe [*F*], who will speak on 'The Relationship of Landscape Architecture to Allied Professions.'

Full particulars are obtainable from: the Chairman, Organising Committee, I.F.L.A. Congress 1960, Middenweg 66, Amsterdam, Holland. General information from 1 Park Crescent, London, W.1 (Museum 3473).

Conference for Church Architects. A three- or four-day conference will be held in Birmingham from Monday 4 April to Thursday 7 April on the problems which arise when church authorities ask an architect to design a new church building. Comparison between the new churches of Britain and some in continental Europe suggests that a continued exchange of views between architects and clergy (of all denominations) is most desirable.

The conference is being organised by the Department of Extra-mural Studies of the University of Birmingham, which has already arranged several successful conferences in this field. The meetings will take place at the City of Birmingham Teachers' Training College, Edgbaston (about 1½ miles from the city centre), where residential accommodation is available. Speakers will include clergy concerned with the current movement for liturgical renewal and architects engaged in building new churches. Special attention will be given to some German 'directives' concerned with church building. Visits will be paid to several new churches in Birmingham, and full opportunity will be provided to discuss their character.

Programmes and applications forms will be forwarded to all who send in their names and addresses to The Director, Dept. of Extra-mural Studies, The University, Edmund St., Birmingham 3.

Society of Architectural Historians of Great Britain. The third volume of *Architectural History*, the journal of the Society of Architectural Historians of Great Britain, will soon be published and the society is preparing its programme for 1960. This will include the Annual Conference to be held at Oxford in September.

Earlier volumes of *Architectural History* are now in short supply and libraries and others intending to subscribe to the society are asked to make early application if they wish to obtain these volumes. Correspondence regarding the Society should be addressed either to the Honorary Secretary, Mr. Frank I. Jenkins [*A*] or the Honorary Treasurer, Dr. Derek Buttle [*A*], at the School of Architecture, University of Manchester.

Architects' Christian Union. The first quarterly reception for 1960 was held at the R.I.B.A. on Tuesday 19 January, when some 160 guests were present, including Mr. Basil Spence, President R.I.B.A., and Mr. Gordon Ricketts, Secretary R.I.B.A.

Mr. E. A. S. Houfe [*F*] was in the chair and welcomed Mr. Spence, who introduced the guest speaker, the Lord Bishop of Coventry.

The bishop addressed the meeting on the subject of 'Life', considering it from several aspects of interest to the architect, finally pointing to the ultimate purpose of a man's life—to be in a right relationship with Jesus Christ.

Cost Control Handbook. Copies of the handbook of the Manchester R.I.B.A. Cost Control Conference are available from the Royal Institute at 25*s*.

Association of Official Architects. Miss Moira Shield [*A*] has had to resign the secretaryship of this association and pending the general election of a new general council this year, Mr. G. J. Foxley [*A*] has been appointed as acting Honorary Secretary.

The last meeting of the association's executive committee was held on 13 February.

Whilst new towns and hospital boards will continue to be represented by an elected member on the general council, it is the association's wish that new towns support the appropriate regional organisation in which they are geographically situated.

Election of the Northern Region Provisional Executive Committee. The following officers have been elected: Chairman: Mr. J. Duxbury [*L*], Gateshead County Borough; Vice-Chairman: Mr. H. R. Clark [*L*], Cumberland County Council; Secretary: Mr. D. R. Wood [*A*], Northumberland County Council; Treasurer: Mr. R. A. Yendall [*A*], Durham County Council.

The Liverpool Regional Branch was formed on 9 December 1959, when the following officers and committee were elected: Chairman, Mr. R. R. Burton [*A*] (Liverpool County Borough); Vice-Chairman, Mr. J. Brereton [*L*] (Birkenhead County Borough); Hon. Secretary, Mr. G. T. Higson [*A*] (Liverpool City); Treasurer, Mr. B. A. Rider [*A*] (Liverpool City); Mr. J. A. Williams [*A*] (Liverpool City); Mr. F. A. Brudenell [*A*] (Liverpool City), Regional representative (Member of Association General Council): Mr. J. H. Davies [*A*] (Wallasey County Borough). Publicity officer: Mr. G. Elliott [*A*] (Liverpool County Borough).

All communications relevant to this region are to be addressed to the Hon Secretary, c/o City Architect's Department, Re-development Section, Blackburn Chambers, Dale Street, Liverpool 2.

The East Anglian Regional Branch of the Association has been formed and the following officers were elected: Chairman, Mr. J. H. Pogson [*A*]; Vice-Chairman, Mr. P. R. Coulten [*A*]; Hon. Secretary, Mr. G. Keith [*A*]; Hon. Treasurer, Mr. J. R. Leeks [*A*]; Committee Members, Mr. J. Turner [*A*], Mr. P. H. Liversidge, M.A. [*A*], Mr. H. Wightman [*A*], Mr. G. G. Quarmby [*A*].

All correspondence should be addressed to the Hon. Secretary, c/o City Architect's Office, City Hall, Norwich.

The Northants, Bedfordshire and Huntingdonshire Regional Branch was formed on Wednesday 30 December 1959 when the following officers and committee were elected: Chairman, Mr. H. Hartley [*A*], Hon. Secretary and Treasurer, Mr. A. F. Paquay [*L*], Mr. G. W. Waters [*A*], Mr. F. E. Sherratt [*A*], Mr. K. G. Dines [*A*], Mr. R. V. Trigg [*L*].

Notes from the Minutes of the Council

MEETING HELD ON 2 FEBRUARY 1960

Appointment of R.I.B.A. Representatives

(*a*) *Ministry of Works Building and Civil Engineering Regional Joint Committees: Eastern (Cambridge) Committee.* S. E. Bragg [*F*] in place of H. C. Boardman [*F*] (appointed by the Council 5.1.60) who was unable to serve.

(*b*) *Architects' Registration Council, for the year beginning 1 April* 1960. W. A. Allen [*A*], J. B. Brandt [*F*], J. E. A. Brownrigg [*A*], L. A. Chackett [*F*], Denis Clarke Hall [*F*], Thomas S. Cordiner [*F*], Clifford Culpin [*F*], A. G. Sheppard Fidler [*Vice-President*], R. O. Foster [*F*], Norman H. Fowler [*F*], S. Vincent Goodman [*F*], F. R. Greenen [*A*], W. G. Howell [*A*], Leonard C. Howitt [*F*], S. A. W. Johnson-Marshall [*A*], Cecil Kennard [*F*], Arthur Lazenby [*A*], A. H. Livingstone [*A*], E. D. Lyons [*A*], Eric A. Lyons [*F*], E. D. Mills [*F*], J. A. H. Mottram [*A*], T. E. North [*F*], F. B. Pooley [*F*], John C. Stillman [*A*], H. T. Swain [*A*], E. F. Tew [*F*], R. H. Uren [*F*], David B. Waterhouse [*A*], Thurston M. Williams [*A*].

(*c*) *Royal Society of Health Congress, Torquay,* 25–29 *April.* D. E. E. Gibson [*F*].

(*d*) *Registered Plumbers' Association: Annual Meeting of the General Council, Birmingham,* 17 *June; and an exhibition of Modern Plumbing at the Princes Hall, Birmingham,* 13–17 *June.* Edward Holman [*F*].

(*e*) *Liverpool School of Architecture: Elmes Testimonial Fund.* M. G. Gilling [*F*] (as a Foundation Trustee, for a further term of three years).

R.I.B.A. Award for Distinction in Town Planning. Approval was given to the conferment of the Award for Distinction in Town Planning upon Mr. Edward W. Armstrong [*F*] (New Zealand), The Hon. Lionel Brett [*F*], and Mr. L. G. Vincent [*A*].

Membership. The following members were elected: as Fellows 9; as Associates 219.
Students. 58 Probationers were elected as Students.

Applications for Reinstatement. The following applications were approved: as Associates: John Lawrence Greenwood, Francis Hurst Healey, Louis Rigola Volonterio; as Licentiate: Stanley Clifford Gunning.

Obituary. The Secretary reported with regret the death of the following members: James Macneil Cowie [*F*], A. Louis Dotto [*F*], George Alexander Gale [*F*], Harold Clayforth Mason, O.B.E. [*Retd. F*], John Breakwell [*A*], James Charles David Cownie [*A*], Edmund Graeme Hann [*A*], Harry Hubbard [*A*], Alec Owen [*A*], Gordon Stuart Horner [*L*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

Obituaries

Geoffrey Reynolds Barnsley [*F*] [*Ashpitel Prizeman* 1924] died suddenly on 27 October 1959, aged 59.

Mr. Barnsley was Warwickshire County Architect since 1953. He was taken ill while inspecting the new Keresley High School near Coventry and died later in the Warneford Hospital.

He served in the Royal Air Force from 1918 to 1919; and from 1919 to 1922 he was articled to Messrs. Robert Bennett [*A*] and Wilson Bidwell. From 1923 to 1927 he was an assistant to Sir John Simpson [*Past President*] and Mr. Maxwell Ayrton [*F*], London. Until 1936 he was manager and chief assistant to Mr. Maxwell Ayrton. From 1931 to 1936 he was also in private practice.

In 1924 he was the winner of the Ashpitel Prize.

While architect to Welwyn Garden City Urban District Council he was responsible for the erection of 141 houses and eight flats for aged couples.

Mr. Barnsley went to Warwickshire in 1936 as chief assistant architect to the county council. He was appointed deputy County Architect in 1945.

The outstanding work for which he was responsible during his time as Warwickshire County Architect was the building of a new County Council chamber at the Shire Hall. Much of his work in the post-war years concerned buildings for education. He was responsible for new technical colleges at Nuneaton and Leamington, and additions at Rugby; also for very many schools, fire stations and health and welfare buildings.

A vice-president of the County Architects' Society, Mr. Barnsley was until recently a member of the Council of the Birmingham and Five Counties Architectural Association.

Percy Vivian Burnett [*F*] died on 26 December 1958, aged 62.

Mr. Cecil J. Epril [*F*] writes:—

'Percy Vivian Burnett was born on 12 December 1896, educated at St. Paul's, and articled to Sir Banister Fletcher in 1912. His articles were virtually complete when he volunteered for military service and joined the Royal Flying Corps, to be demobilised early in 1919. He studied at the Architectural Association Schools; was elected [*A*] in 1921 and began in practice in Jermyn Street immediately after in partnership with Donald MacPherson [*A*].

'In 1923 we renewed a pre-war friendship and as I was looking for offices in those far-off days Percy Burnett generously offered me part of his own room over a cheese shop in Jermyn Street. By this time Donald MacPherson—to become his partner in recent post-war years—had sought his fortune elsewhere.

'We joined forces in 1923 and though our partnership was dissolved in a manner equally as friendly and understanding as that in which it had been formed it was the second world war and the loss of our offices in 107 Jermyn Street, opposite the old Geological Museum, which severed a working arrangement which might have gone on indefinitely. In 1930 Burnett was elected a Fellow.

'Percy Burnett was a clever organiser, a shrewd administrator and the epitome of efficiency. He kept notes of every job methodically, detailed but precise and was exemplary in this respect. Woe betide a contractor, subcontractor, the gentleman on the other side of the fence, or even a client who disputed or questioned a fact in one of his jobs.

'He liked planning and planned well but his great flair was for the legal side of the profession. Opportunity came his way in 1930 when he advised in a matter of ancient lights in what is now a much-quoted case. Percy J. Waldram [*L*] was our expert and the claim was for loss of reflected light. Though our clients eventually lost the case as well as the light, the judge was very kind about Burnett's evidence. This case led to a lot of work in which Burnett revelled and eventually he became no mean expert himself, highly respected by all who met him in these difficult cases.

'Another ancient light case early on had a peculiar ending. Our clients were awarded £1,000 damages and late one Friday afternoon their solicitor's clerk arrived with our fees and costs, well over £100 in bank and treasury notes and this less than five minutes to go. The money was banked. Over the week-end the office was burgled! Later on the C.I.D. sent inspectors to check up on "certain monies" paid to us in five-pound notes. It appeared that the chief of our client's firm of solicitors was in gaol for embezzlement and whilst "away resting" as the C.I.D. tactfully put it his clerk embezzled him. We were the only ones paid!

'In 1942 Burnett was appointed to the Lighting Committee of the Building Research Board of the Department of Scientific and Industrial Research, and while a member of the committee was invited to present evidence.

'The Burnett Diagrams are included in Appendix III, *Methods of Sunlighting Analysis of the Post-War Building Studies No.* 12: *The Lighting of Buildings*, and referred to as the most useful of all methods to designers. He was also responsible for *A Method of Measuring Insolation* in Appendix VIII of this publication.

'In 1954 Burnett was appointed a Deputy Commissioner to the War Damage Commission and served with considerable distinction up to the date of his death.'

Mr. Burnett was a past member of the R.I.B.A. Practice Committee, Architectural Science Board, and Science Committee, and of the Joint Committee of London Architects and Builders.

Among the principal buildings on which he worked were blocks of flats at Mill Hill, Hendon, Brent, Golders Green, Maida Vale, Colindale, Finchley, Ealing, Camberwell, Greenwich, Chesterfield House, South Audley Street, and office blocks in St. Bride Street, E.C.4 and Mark Lane, E.C.3.

Benjamin Murray Manson [*A*] died on 26 September 1959, aged 47.

W. E. Hollins, M.B.E. [*F*], writes:—

'As a close colleague of Mr. B. M. Manson for several years I would like to express my appreciation of one whose kindliness and human qualities endeared him to all those who had the privilege of working with him.

'Ben Manson received his training in the office of the late T. Forbes MacLennan [*F*] of Edinburgh and at the Edinburgh College of Art.

'In 1937 he joined the Scottish Directorate of the Ministry of Works, where he was associated with the section responsible for the design and erection of Post Office buildings in Scotland.

'In 1952 he transferred to the Architecture and Planning Division of the Department of Health for Scotland and was attached to the unit dealing with special buildings for the Scottish Home Department.

'Mr. Manson was a highly competent architect with a particular flair for the adaptation of old buildings.

'His war record is also worthy of comment. Joining the Territorial Army before the second world war, he was transferred to the Royal Engineers on the outbreak of hostilities and later to the Indian Army where he attained the rank of lieutenant colonel, serving in India and Persia.

'A keen Rugby player in his early life, he was later in demand as a referee. As a member

of the Church of Scotland he was an elder of the Highland Church, Edinburgh, for several years.'

Lt-Col. Harold Clayforth Mason, O.B.E. [*Retd. F*], died on 10 January 1960.

Mr. J. M. Wilson [*F*] writes:

'Colonel Mason had had an interesting career both as a soldier and as an architect. As a soldier he served in two world wars, and as an architect he worked in the Middle East and in England.

'He started his architectural training in 1908 in the office of his father, Mr. W. L. Mason [*F*]. Later he joined the School of Architecture at Liverpool University [where he was Holt Travelling Scholar in 1911. He obtained a first-class certificate in architecture], and from there passed for a period to the British School at Rome. He was also a student at the Royal Academy Schools in London, whilst serving as an assistant to Mr. C. H. B. Quennell [*F*]. [In 1913 he won the Royal Academy of Arts Silver Medal for Drawings and the Bronze Medal for Architectural Design; in 1914 the Silver Medal for Design.] In 1913 also he was awarded the Silver Medal of the R.I.B.A. for measured drawings of Blenheim Palace.

'Immediately on the outbreak of the first world war, he enlisted in the 1/5th Battalion East Surrey Regiment and was later commissioned in the Indian Army Reserve of Officers and saw active service in India, North-West Frontier, Mesopotamia, and Afghanistan. He was three times mentioned in despatches.

'On demobilisation in 1920, with the rank of temporary major, he joined the newly-created Public Works Department in Iraq as Assistant Government Architect. Within a year, and after the 1920 rebellion in Iraq, during which he served, he became the Government Architect. In 1935 he left Iraq and joined in partnership with J. M. Wilson.

'In 1940 he re-enlisted in the Royal Engineers and saw active service in France and Belgium, and was again mentioned in despatches. In 1945 he retired to the unemployed list with the rank of lieutenant colonel.

'During his service as Government Architect in Iraq he was responsible for the design of many government buildings which, whilst not in the modern idiom, are today examples of sound planning and construction. [They included Baghdad airport and a villa for H.M. King Ghazi I.] For his services he was awarded the O.B.E. in the Birthday Honours of 1933 and two years later, on leaving the service of the Government of Iraq, he was given the Order of the Rafidain of Iraq (Class III).

'In London he was a very active partner to J. M. Wilson, and the firm (J. M. Wilson, H. C. Mason and Partners [*F*/*A*/*L*]) carried out many extensive works for the oil companies in Iraq, Kuwait and in this country. To recite a list of these works might be misleading, but the number and variety was great. The airport at Basrah, the Technical School in Abadan, housing and offices in Kuwait, and the Dover Harbour Board car ferry terminal are a few.

'Apart from his love of architecture, Colonel Mason had one other—philately—which retained his interest almost up to the day of his death. He was a Fellow of The Royal Philatelic Society, London, and frequently exhibited his special collection.

'As a partner, he was a loyal and sincere support to his senior partner and an outstanding example to his staff, who were all devoted to him. By them he has already been sadly missed, but is fondly remembered.'

Membership Lists

ELECTION: 2 FEBRUARY 1960

The following candidates for membership were elected on 2 February 1960.

AS FELLOWS (9)

Davies: Eric, A.M.T.P.I. [*A* 1933], Warwick.
Gregory: Patrick Brian, B.A.(Belfast) [*A* 1951], Belfast.
Inglis: Alick Walter Gordon [*A* 1950], Kampala, Uganda, East Africa.
Jackson: Frank [*A* 1938], Great Yarmouth.
Kelsey: Norman George [*A* 1945], Southsea.
Moore: John Edwin [*A* 1933].
Newman: Frederick Hugh [*A* 1948], Wellington, New Zealand.

and the following Licentiates who are qualified under Section IV, Clause 4(*c*)(ii) of the Supplemental Charter of 1925:

Dancey: Cyril Vinson, Gloucester.
Pye: James Frederick, Grimsby.

AS ASSOCIATES (219)

Adkins: Albert John, Banbury.
Ainscow: Terence Noel, Manchester.
Allen: Henry Edward, Reading.
Andrews: Brian Rex, Brighton.
Auger: George Charles Boyd, B.Sc.(Lond.), A.M.I.C.E.
Bailey: David William, Macclesfield.
Baldock: Alec John, Dipl.Arch.(Canterbury), Gravesend.
Barber: Charles Ernest, Sevenoaks.
Barber: Robert Anthony, Bromley.
Barnby: Clive, Bridlington,
Barnes: Frederick Joseph Edward Charles.
Barnes: Geoffrey Alfred, Christchurch.
Bartleet: Stephen Timothy, A.A.Dipl., Plymouth.
Bartlett: John, A.A.Dipl., Clacton-on-Sea.
Beales: Colin, Bristol.
Bentham: Neil, Bolton.
Berney: Keith, Portslade.
Bound: Peter John, Farnborough.
Bousfield: Ernest John, Liversedge.
Bowden: Peter John, Dipl.Arch.(Canterbury), Deal.
Boyd: Robert Burns, D.A. (Glas.), Paisley.
Braddock: Malcolm Ian, Macclesfield.
Bradshaw: William Trevor, Dip. Arch.(Manchester), Broxbourne.
Brown: David Baker, Salisbury.
Brown: Kennish John Holman, B.A.(Arch.) (Lond.).
Brown: Walter Brook, New Malden.
Bruce: John Fyvie, Aberdeen.
Buck: James Andrew, Huddersfield.
Cameron: Duncan, Bangor, Co. Down.
Campbell: Mostyn Fitz-Gerald.
Cann: Stanley Buckingham, M.B.E.(Mil), Dalkeith, Western Australia.
Carlisle: Ronald Gilbert, D.A.(Glas.), Lochwinnoch.
Chamberlain: Alan, Newcastle, Staffs.
Chamberlayne: Derek, Stroud.
Chapman: William John Malcolm, Brighton.
Chew: Thomas Walter, Bradford.
Child: Ronald, Lower Morden.
Chisholm: Ross Kingsley, Perth, Western Australia.
Chooi: Yong Khoon, B.Arch.(Melbourne), Melbourne, Victoria, Australia.
Church: David Edward, Dipl.Arch.(Oxford).
Clack: (Mrs.) Jennifer Anne, Dip.Arch.(The Polytechnic), Tunbridge Wells.
Clancy: Charles A., Dublin.
Comley: Edgar Thomas Patrick, Eastbourne.
Cook: William Vincent, Burton-on-Trent.
Cooke: Jeffrey Vernon, Chester.
Corvin-Mlodnicki: Adam Alexander.
Cossins: John Stuart, Havant.
Crawley: Peter Joseph, Purley.
Crossley: David Peter Vivian, Huddersfield.
Crouch: Cyril Herbert, B.Arch.(Rand), Bulawayo, S. Rhodesia.
Cull: Norman Frederick, A.R.I.C.S.
Cunningham: William, D.A.(Glas.), Lanark.
Cutler: Andrew McCallum, Reigate.
Davies: Robert Stephen Islwyn, Cardiff.
Day: Laurence Arthur, Birmingham.
Dean: Ronald, Radcliffe.
Deans: John, Falkirk.
Denholm: David, Dip.Arch.(Dunelm.), Newcastle upon Tyne.
Dickenson: Ronald Leslie, Dipl.Arch.(Northern Polytechnic), Maidstone.
Dixey: Michael Gordon Duncan, Ely.
Donaldson: William Fairservice, Stirling.
Donnell: Derrick Norman, Shrewsbury.
Duckworth: Thomas Raymond, Accrington.
Dyer: David Roger, Dip.Arch.(Birm.), Stratford-upon-Avon.
Earwaker: Jack, Ipswich.
Edwards: Emyr, Birmingham.
Ericsson: Brian Carl, Dipl.Arch.(U.C.L.).
Evans: Alfred John Alan, Newent.
Forsyth: John Ian.
French: (Miss) Gillian, Dip.Arch.(Birm.), Chipstead.
Frost: Kenneth James, Nottingham.
Galloway: Ronald Kidd, D.A.(Dundee), Dundee.
Galvin: Patrick J. M.
Goldsack: Colin Ernest John, Folkestone.
Goldsmith: John William.
Gooch: James.
Gostage: Anthony David, Bexhill-on-Sea.
Gray: John, Dip.Arch.(The Polytechnic).
Groves: Joseph Alan, Dip.Arch.(Manchester), Sale.
Guest: Christopher John Graham, M.A.(Cantab.), A.A.Dipl., Edinburgh.
Guy: Richard, Sandyford, Co. Dublin.
Haddow: Thomas Harley, M.I.C.E., Edinburgh.
Hall: John, Bolton.
Hall: John Brian, Stoke-on-Trent.
Harris: Christopher Langridge.
Hart: Paul Melvel, Dipl.Arch.(U.C.L.).
Herrick: John Alfred, Newbury Park.
Holland: Michael Gregory, Portsmouth.
Holmes: Eric, Edinburgh.
Hornal: John Wilson, D.A.(Glas.), Greenisland, Co. Antrim.
Horne: Duncan David Garside.
Horsman: Michael Arnold.
Howard: Michael Lawrence, Malvern.
Howitt: David Alan.
Hughes: Vincent Owen, Lyndhurst.
Hunter: William Duncan, D.A.(Glas.), Glasgow.
Huyton: George Edward Arthur, Sanderstead.
Jackman: Charles Brian, Newton Aycliffe.
Jackman: Lawrence Ernest Charles, Worcester Park.
Jarvis: Gordon Francis Spencer, Waltham Cross.
Jeffers: Brendan Patrick, Monkstown, Co. Dublin.
Jenner: Michael John, Bristol.
Jessop: Basil Grundy, Portstewart, Co. Londonderry.
Johnson: James Henry, Dipl.Arch.(Northern Polytechnic).
Johnston: (Miss) June Eveline, Belfast.
Jones: Donovan William, Northampton.
Jones: Martin Maurice, Worcester.
Kendall: Edward John Harry, A.R.I.C.S., Westbury-on-Trym.
Kershaw: John Taylor, Halifax.
Ketkar: Mukund Atmaram, Bombay, India.
Khan: Joseph, D.A.(Glas.), Glasgow.
King: Ian Charles, Dipl.Arch.(U.C.L.).
Kitchen: Michael John, B.Arch.(Dunelm.), Marske-by-the-Sea.
Kubienski: Jan Jozef, Dipl.Arch.(Northern Polytechnic), Salisbury, S. Rhodesia.
Kythreotis: Michael Diomedes.
Laniado: Ralph.
Lawson: Ian Forsyth, Banbury.
Laybourne-Smith: Gordon, M.C., E.D., North Adelaide, South Australia.
Lewis: John Frederick Richard, Rayleigh.
Linford: Robert Neil, Dipl.Arch.(Northern Polytechnic).
McCaig: Ian, D.A.(Glas.), Greenock.
McColl: James Brooks Thomson, D.A.(Glas.), Paisley.
McCook: Albert Frederick, Christchurch, New Zealand.
McGregor: Kenneth Scott, Dundee.
McKie: Malcolm David, Dipl.Arch.(Hull), Driffield.
Macpherson: Allen Andrew Peter, D.A.(Glas.), Dumfries.
McSheffrey: Gerald Rainey, Dipl.Arch.(U.C.L.), Belfast.
Maggs: John Keeling, Bristol.
Marsden: Arthur Theodore Whitwell, Northallerton.
Marsh: Eric David, Sevenoaks.
Masani: (Mrs.) Dolly Dady.
Mather: Robert William, Newcastle upon Tyne.

Mead: Leonard Charles, Harlow.
Meek: Angus John, Dip.Arch.(R.W.A.), Bath.
Memess: Claude Alexander, Didcot.
Mercer: Alan Frederick, Dorking.
Mewa: Ronald Hector, B.Arch.(Auck., N.Z.), Auckland, New Zealand.
Mickel: Derek Andrew, D.A.(Glas.), Newton Mearns.
Miller: Norman Arthur, Dip.Arch.(The Polytechnic).
Mills: James Philip.
Mills: Keith William, Dip.Arch.(The Polytechnic), Croydon.
Munden: Patrick Joseph, Dublin.
Murphy: Terence, Brighton.
Noble: Harry, Huddersfield.
Northover: Christopher Frank, Dipl.Arch.(Canterbury), Tenterden.
O'Dell: Donald Leslie Walter, Nottingham.
Outerbridge: (Mrs.) Christine Anne, B.Arch.(McGill), Bailey's Bay, Bermuda.
Paige: John Benson, Brighton.
Parfect: Michael Alexander Barker, B.A.(Arch.), Dip.T.P.(Lond.).
Parker: Kenneth William.
Parkin: Ronald, Castleford.
Pathare: Ramesh Manohar.
Patterson: Iain Robb, Glasgow.
Pearse: Frank William, Dip.Arch.(The Polytechnic), Swanley.
Peat: William Burns, D.A.(Glas.), Vancouver, B.C., Canada.
Perkins: Arthur Crisfield.
Peters: Anthony Alec, B.Arch.(L'pool), Montreal, P.Q., Canada.
Pitcher: Peter.
Portman: Frank Walker, Huntingdon.
Powys: Oliver, Dip.Arch.(Birm.), Richmond, Surrey.
Price: Francis Geoffrey, B.A.(Arch.)(Lond.).
Quann: Anthony Gordon, Henfield, Sussex.
Rae: John Campbell, Dipl.Arch.(U.C.L.), Dip.T.P.(Lond.), Exeter.
Ransley: Francis David Dixon, Macclesfield.
Reczelewski: Edward, Nottingham.
Rettie: Harry Rollo, D.A.(Glas.), Toronto, Ontario, Canada.
Revill: Gerald Lutton, Belfast.
Riby: Harry, Manchester.
Richards: Athol Desmond, B.Arch.(Melbourne), Dip.Arch.(Melbourne).
Roberts: William Glanville, Cardiff.
Robson-Smith: Ronald William, Cheam.
Rolls: Kenneth William, Birkenhead.
Rudrum: Anthony Goffin.
Russen: Patrick William, Oxford.
Sanders: Ian, Market Drayton.
Sangster: Alexander, D.A.(Dundee), Montrose.
Saunders: Philip Hector, B.A.(Cantab.), Woking.
Schoon: George Edwin, M.C.D., B.Arch.(L'pool), Camberley.
Sellors: Geoffrey Webb, Bakewell.
Smith: Douglas Munro, D.A.(Glas.), Belfast.
Smith: John Derek Vawdrey.
Smith: Lawrence Leonard, Milford.
Smith: Peter Brookland, Bristol.
Smith: William Munro, D.A.(Glas.), Glasgow.
Snow: Terence Clive, East Barnet.
Stansell: (Miss) Elizabeth Miriam, Taunton.
Stanton: Frederick Howard, D.F.C., Shrewsbury.
Stanton: Glyn Rhys Thos., Dip.Arch.(Cardiff), Kumasi, Ghana, West Africa.
Stokes: James Allan, Dartmouth.
Stuart: Malcolm Graham.
Sukumaran: Kaithavalapil Govindan.
Tallo: Gabor, Milltimber.
Taylor: Alan Stanley, Romford.
Tham: Lester Boon Kheng.
Thompson: Peter, Dipl.Arch.(Oxford), Oxford.
Tonge: Michael Kenneth, D.A.(Dundee), Dundee.
Torrance: Ian McAllister, Eastbourne.
Trussler: David John, Havant.
Tulip: James, Sunderland.
Turner: Leslie William Charles, Sittingbourne.
Turton: John Francis, Harlow.
Vallis: Walter William Ritson, Dip.Arch.(R.W.A.).
Van Mol: Gustave Anna Joseph, Dartford.
Vaughan: Graham Duff, A.S.T.C.(Arch.), Sydney, New South Wales, Australia.
Ventham: John Sidney, Southsea.
Wall: Douglas Charles, B.Arch.(L'pool), Liverpool.
Wall: Trevor, Leamington Spa.
Walters: Gerald Frank, Andover.
Ward: Ian, Carlisle.
Warwick: Alan Bruce, B.Arch.(Auck., N.Z.), Auckland, New Zealand.
Webster: Derek George, Fareham.
Wili: Bernard Maurice.
Wilkins: John, Bristol.
Williams: Gwilym Alltwen, Dip.Arch.(Wales), Cardiff.
Willson: Norman Lawrence, Dip.Arch.(R.W.A.), Weymouth.
Wilson: John Robert Arthur, A.A.Dipl., Torquay.
Wong: Kin Men.
Wood: Bernard William, Newcastle upon Tyne.
Wood: Edmund Hugh, Wrexham.

ELECTION: 5 APRIL 1960

An election of candidates for membership will take place on 5 April 1960. The names and addresses of the candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Monday 14 March 1960.

The names following the applicant's address are those of his proposers.

AS FELLOWS (6)

Barker: John Clifford, Dipl.Arch.(Leeds), A.M.T.P.I. [*A* 1948], Deputy County Architect, County Offices, Aylesbury, Bucks; 19 Northumberland Avenue, Aylesbury. D. E. E. Gibson, F. B. Pooley, Raymond C. White.

Bedford: Peter Francis, M.A.(Cantab.), Dip. Arch.(Sheffield), [*A* 1941], c/o Messrs. Ramsey, Murray, White and Ward, 32 Wigmore Street, W.1; 19 Hollycroft Avenue, N.W.3. Keith D. P. Murray, Prof. Basil Ward, C. S. White.

and the following Licentiates who are qualified under Section IV, Clause 4(*c*)(ii) of the Supplemental Charter of 1925:

Brayshaw: Frederick Norman, Architects Dept., C.W.S. Ltd., 99 Leman Street, E.1; 32 Evelyn Way, Wallington, Surrey. W. J. Reed, Cecil E. M. Fillmore, V. Leslie Nash.

Brown: Bernard Owen, 32 Chipper Lane, Salisbury; The Mill House, Barford-St.-Martin, near Salisbury. Eric L. Thompson, Robert Potter, J. H. Jacob.

Swanston: Stuart Murray, Architects Dept., C.W.S. Ltd., 99 Leman Street, E.1; 15 Hawkhurst Way, West Wickham, Kent. W. J. Reed, Arthur H. Ley, G. S. Hay.

Willett: Cecil Harold Alva, Town Hall, Reading, Berks; 41 Lawrence Road, Reading. T. L. J. Chamberlain, E. Steward Smith, A. G. Armstrong.

AS ASSOCIATES (55)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Allen: John Geoffrey, D.A.(Edin.), (Edinburgh Coll. of Art: Sch. of Arch.), 174 North Saughton Road, Edinburgh 12. Applying for nomination by the Council under Bye-law 3(*d*).

Badham: John, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 31 Chatsworth Road, Willesden, N.W.2. P. H. P. Bennett, H. B. Leighton, Prof. John Needham.

Bennett: David Brian Cole, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 'Greencott', Goodyers Avenue, Radlett, Herts. Thos. E. Scott, C. G. Bath, J. L. Caldwell.

Bishop: Patrick John, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 26 St. Paul's Road, Canonbury, N.1. John S. Walkden, J. S. Foster, Peter Goodridge.

Boyman: Derek Leslie, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 11 Thorpe House Road, Sheffield 8, Yorks. Prof. Stephen Welsh, H. B. Leighton, Prof. John Needham.

Blowers: Keith Edward, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 80 Orchard Grove, Edgware, Middx. John S. Walkden, Peter Goodridge, J. S. Foster.

Burnaby: Geoffrey Valentine, B.A.(Cantab.), D.A.(Edin.), (Edinburgh Coll of. Art: Sch. of Arch.), 52 Buckingham Road, Aylesbury, Bucks. F. B. Pooley, David Roberts, A. R. C. Johnston.

Chapman: Sydney Brookes, Dip.Arch.(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 34 Legh Road, Prestbury, Cheshire. Prof. R. A. Cordingley, Prof Clifford Holliday, Dr. William A. Singleton.

Colston: Arthur Edward, B.A.(Arch.)(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 'Dolphins', Eccles Road, Chapel-en-le-Frith, via Stockport, Cheshire. Prof. R. A. Cordingley, Prof. Clifford Holliday, Eric S. Benson.

Cox: John Morris (Final), 15 Garsdale Drive, Wilford, Nottingham. H. T. Wykes, C. G. Tagholm, D. J. Howells.

Crosby: Frederick Ernest (Final), 3 Leopold Road, Ealing Common, W.5. A. M. Gear and applying for nomination by the Council under Bye-law 3(*d*).

Curtis: David Arthur, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 'Veronique', Keepers Walk, Virginia Water, Surrey. C. H. Elsom, John S. Walkden, R. Derek Hammett.

Davis: Robert Michael, Dip.Arch.(Dunelm.), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 42 St. George's Terrace, Jesmond, Newcastle upon Tyne 2. Prof. W. B. Edwards, Prof. J. H. Napper, Bruce Allsopp.

Finney: John Edgar, Dip.Arch.(Nottm.), (Nottingham Sch. of Arch.), c/o County Architect's Dept., Pembrokeshire County Council, County Offices, Haverfordwest, Pembrokeshire. Norman Summers, J. Gordon Woollatt, J. W. M. Dudding.

Garfield: (Miss) Olive Ruth, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 2 Lennox Gardens, S.W.1. John S. Walkden, Peter Goodridge, J. S. Foster.

Gibson: Neville Mercer, Dipl.Arch.(Canterbury), (Canterbury Coll. of Art, Sch. of Arch.), Carolcott, Teston, nr. Maidstone, Kent. Applying for nomination by the Council under Bye-law 3(*d*).

Glass: Martin, Dip.Arch.(Wales), (Welsh Sch. of Arch.: The Tech Coll., Cardiff), 6 Richmond Villas, Ffynone, Swansea, Glam. Lewis John, Dr. T. Alwyn Lloyd, C. F. Jones.

Gray: James Alexander, D.A.(Edin.), (Edinburgh Coll. of Art: Sch of Arch.), 65 Comely Bank Road, Edinburgh. Prof. R. H. Matthew, and applying for nomination by the Council under Bye-law 3(*d*).

Harrison: Alan Sidney, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 84 Birmingham Road, Shenstone, Lichfield, Staffs. Prof. John Needham, Harry W. Weedon, Arthur L. Hall.

Harwood: Hugh Kemp, Dipl.Arch.(Kingston), (Sch. of Art, Kingston-upon-Thames: Dept. of Arch.), 23 Epsom Road, Guildford, Surrey. J. A. Strubbe, G. E. Cassidy, Frederick Barber.

Hedworth: David William, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), c/o Messrs. Sanctuary and Son, Bridport, Dorset. L. Magnus Austin, Reynold K. Brett, Ronald A. Phillips.

Hodgson: Geoffrey, B.A.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 196 Wales Road, Kiveton Park, Sheffield. Prof. Stephen Welsh, H. B. Leighton, Prof. John Needham.

Holt: Richard Eric Joseph, Dip.Arch.(Leics.), (Leicester Coll. of Art and Tech.: Sch. of Arch.), 'Hillcrest', London Road, Tollbar, Coventry, Warwickshire. Robert J. Howrie, S. Penn Smith, Arthur Ling.

Hoult: (Miss) Beatrice Sheila, Dip.Arch.(Dunelm.), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), Sycamore Lodge, Melbury Road, Newcastle upon Tyne 7. Prof. W. B. Edwards, Dudley L. Couves, A. Applegarth.

Jackson: Frank, Dipl.Arch.(U.C.L.), (Bartlett Sch. of Arch.: Univ. of London), 69 Highlands Road, Horsham, Sussex. Hubert Bennett, David Jenkin, A. R. Borrett.

Jobson: John, Dip.Arch.(Dunelm.), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 158 West Avenue, Westerhope, Newcastle upon Tyne 5. Lt-Col. A. K. Tasker, F. Austin Child, Prof. W. B. Edwards.

Jones: James, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 23 Quarry Avenue, Hartshill, Stoke-on-Trent, Staffs. Prof. Stephen Welsh, H. B. Leighton, J. R. Piggott.

Juniper: David John, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 24 Whyteleafe Hill, Whyteleafe, Surrey. John Daviel, John S. Walkden, A. A. Briggs.

Kent: John Frank, (Leeds Sch. of Arch.), 'Wynchmoor', Alandale Road, Garforth, Leeds, Yorks. F. Chippindale, Kenneth Turner, A. W. Glover.

Leslie: William Gray, Dip.Arch.(Abdn.), (Aberdeen Sch. of Arch.: Robert Gordon's

Tech. Coll.), 12 Balgreen Avenue, Edinburgh 12. E. F. Davies, W. H. Kininmonth, Esme Gordon.

Lever: Richard Jeremy Ashton (Final), 15 Moreton Street, S.W.1. K. E. Black, Sir Percy Thomas, G. T. Harman.

McMurray: Gordon, Dip.Arch.(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 156 Gadebridge Road, Gadebridge, Hemel Hempstead, Herts. Prof. R. A. Cordingley, Eric S. Benson, Dr. William A. Singleton.

Martin: Robert Redvers, B.A.(Arch.)(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 28 Frenchwood Avenue, Preston, Lancs. Prof. R. A. Cordingley, Hubert Bennett, David Jenkin.

Mitchell: Duncan, D.A.(Dundee), (Dundee Coll. of Art, Sch. of Arch.), 46 Portland Road, Kilmarnock, Ayrshire, Scotland. Jas. M. Wilson, Chessor Matthew, A. F. S. Wright.

Patel: Khimji Lalji, Dip.Arch.(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 26 Belsize Avenue, N.W.3. Prof. R. A. Cordingley, Eric S. Benson, Leslie J. Bathurst.

Pearson: Neville Alfred (Final), 18 Narberth Crescent, Llanyravon, Cwmbran, Mon. Norman Summers, J. Gordon Woollatt, J. W. M. Dudding.

Poad: John Sherwood, Dipl.Arch.(Hull), (Sch. of Arch., Regional Coll. of Art, Hull), 172 Telford Street, Holderness Road, Kingston-upon-Hull. J. Konrad, W. Gregory Wilson, H. D. Priestman.

Powell: Anthony Edgar, Dip.Arch.(Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 5 Westfield Drive, Wistaston, Crewe. A. C. H. Sullman, P. Woodcock, Prof. R. A. Cordingley.

Reynolds: Gerald John Douglas (Special Final Examination), 58 Hatherley Road, Winchester, Hants. H. C. Ashenden, and applying for nomination by the Council under Bye-law 3(*d*).

Robson: Metford John, Dipl. Arch.(Hull), (Sch. of Arch., Regional Coll. of Art, Hull), 30 Queens Road, Doncaster, Yorkshire. J. Konrad, H. D. Priestman, W. Gregory Wilson.

Rose: Ian, D.A.(Glas.), (Glasgow Sch. of Arch.), 37 Rampart Avenue, Glasgow W.3. A. G. Henderson, Alexander Wright, Walter Underwood.

Sanger: Douglas James, Dipl. Arch.(Kingston), (Sch. of Art, Kingston-upon-Thames: Dept. of Arch.), 28 Austin Road, Orpington, Kent. Applying for nomination by the Council under Bye-law 3(*d*).

Symmons: Hugh Allen, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 6 Carlton Mansions, Carlton Road, Whalley Range, Manchester 16. P. Garland Fairhurst, H. B. Leighton, Prof. John Needham.

Thompson: George Matthew, B.Arch.(Dunelm.), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 25 North Road, Ponteland, Northumberland. Prof. W. B. Edwards, Prof. J. H. Napper, Bruce Allsopp.

Thomson: Colin, D.A.(Edin.), (Edinburgh Coll. of Art; Sch. of Arch.), 9 Glenburn Road, North Berwick, East Lothian. Applying for nomination by the Council under Bye-law 3(*d*).

Tomlinson: Alan James, Dip.Arch.(Nottm.), (Nottingham Sch. of Arch.), 19 Medina Drive, Tollerton, Notts. Norman Summers, J. Gordon Woollatt, J. W. M. Dudding.

Walker: Ian Morton, Dip.Arch. (Manchester), (Victoria Univ. Manchester: Sch. of Arch.), 'Woodside', Mayo Street, Cockermouth, Cumberland. Prof. R. A. Cordingley, Eric S. Benson, and applying for nomination by the Council under Bye-law 3(*d*).

Ward: John Arthur, Dip.Arch.(Leics.), (Leicester Coll. of Art and Tech.: Sch. of Arch.), The Talbot, Stilton, Huntingdonshire. Robert J. Howrie, David Jenkin, Hubert Bennett.

Webster: John Robin Cook, B.A.(Cantab.), Dipl.Arch.(U.C.L.), (Bartlett Sch. of Arch.: Univ. of London), Tower House Mews, Arundel, Sussex. Lord Mottistone, Edward Playne, E. A. S. Houfe.

Whiffin: Mervyn (Final), Granville Lodge, Epping, Essex. Arthur Wilkinson, Frederick Gibberd, A. E. Kelsey.

Wilczynski: Janus Antoni (Special Final Examination), 28D Monmouth Road, W.2. Paul Nightingale, Arthur Korn, Edwin Rice.

Williams: Peter John Frederick, Dip.Arch. (Wales), (Welsh Sch. of Arch.: The Tech. Coll. Cardiff), 'Bali-Hai', Half Acre Lane, Porton Corner, Whitson, nr. Newport, Mon. Lewis John, Dr. T. Alwyn Lloyd, C. F. Jones.

Wilson: David Johnson, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 132 Merville Garden Village, Whitehouse, Newtownabbey, Belfast, N. Ireland. Prof. John Needham, Prof. Stephen Welsh, H. B. Leighton.

Winchester: Peter John, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), 10 Witley Court, Woburn Place, W.C.1. Basil Spence, John S. Walkden, Peter Goodridge.

Woods: (Miss) Mary Elizabeth, Dip.Arch. (Birm.), (Birmingham Sch. of Arch.), 40 King Edward Road, Nuneaton, Warwickshire. A. Douglas Jones, F. W. B. Charles, Arthur Ling.

ELECTION: 21 JUNE 1960

An election of candidates for membership will take place on 21 June 1960. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Friday 27 May 1960.

The names following the applicant's address are those of his proposers.

AS FELLOWS (5)

Clayton: John Cyril [*A* 1948], 516–10 Ave. West, Calgary, Alberta, Canada; 1655 Broadview Road, Calgary. Prof. C. S. Burgess, Prof. E. R. Arthur, Peter M. Thornton.

Koren: Rolf, D.A., Dip.T.P.(Edin.), A.M.T.P.I. [*A* 1948], Messrs. E. E. Keen and Partners, Bank of China Building, Singapore, Malaya; 142B Ford Avenue, Singapore. W. Irving Watson, Henry L. Bloomfield, J. Kirkwood.

Lawson: John Geoffrey Sholto, T.D., B.Arch. (Dunelm.) [*A* 1936], P.O. Box 262, Lusaka, Northern Rhodesia. Sydney H. Lawson, Peter D. Lawson, A. Lloyd Spencer.

Lichtensteiger: David Ward, A.A.Dipl. [*A* 1949], 119 West Pender Street, Vancouver 3, B.C., Canada; 4448 Skyline Drive, North Vancouver. J. H. Wade, Peter M. Thornton and applying for nomination by the Council under Bye-law 3(*d*).

Prew: William Sidney Augustus [*A* 1952], Chief Executive Architect, Federal Ministry of Works and Surveys, Lagos, Nigeria. G. R. Stout, F. C. Haslam, T. Scott.

AS ASSOCIATES (21)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Allen: William John Charles, (Arch. Assoc. (London): Sch. of Arch.), c/o P.W.D., P.O. Box 136, Accra, Ghana. Arthur Korn, Henry G. Goddard, Anthony Cox.

Brooke: Donald Francis, B.Arch. (L'pool), (Liverpool Sch. of Arch.: Univ. of Liverpool), P.O. Box No. 478, Freetown, Sierra Leone. Prof. R. Gardner-Medwin, F. J. M. Ormrod, Bernard A. Miller.

Connell: James Douglas (Final), c/o A. D. Connell, Esq., P.O. Box 6160, Nairobi, Kenya. H. Thornley Dyer, L. G. Jackson, Howard D. Archer.

Dorton: Jervis Harold, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), Y.M.C.A., Room 912, 1441 Drummond Street, Montreal, P.Q., Canada. Alister G. MacDonald, Thos. E. Scott, C. G. Bath.

Ellis: Ronald Cedric, B.A.(Arch.)(Sheffield), (Univ. of Sheffield, Dept. of Arch.), Heimstrasse 6, Winterthur, Switzerland. Prof. John Needham, Harold Conolly, Denis Senior.

Georgiades: Pefkios Joannoy, Dip.Arch. (Sheffield), (Univ. of Sheffield, Dept. of Arch.), P.W.D. H.Q., Nicosia, Cyprus. Prof. Stephen Welsh, Prof. John Needham, H. B. Leighton.

Goff: Aubrey, A.A.Dipl., (Arch. Assoc. (London): Sch. of Arch.), 5th Floor, Prospect Chambers, D.N. Road, Bombay 1, India. Prof. S. S. Reuben, H. N. Dallas, A. S. Patil.

Grainger: James (Final), Apartment No. 10, 5060 Walkley Avenue, N.D.G., Montreal, P.Q., Canada. Arthur L. Hall, Randolph C. Betts, J. Roxburgh Smith.

Gray: Mitchell Anthony, Dip.Arch.(Dunelm.), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), Messrs. Arthur Lindsay and Associates, P.O. Box 1648, Accra, Ghana, West Africa. Prof. W. B. Edwards, Bruce Allsopp, Prof. J. H. Napper.

Holmes: Norman Andrew, Dip.Arch.(Birm.), (Birmingham Sch. of Arch.), c/o Messrs. Vamos and Partners, P.O. Box 5568, Nairobi, Kenya, East Africa. A. Douglas Jones, F. W. B. Charles, J. F. R. Gooding.

Jez: Joseph (Passed a qualifying examination approved by the R.A.I.A.), 57 Young Street, Sylvania Heights, Sydney, N.S.W., Australia. Sir Arthur Stephenson, Mrs. Ellison Harvie, G. L. Moline.

Kyriakides: Kyriakos Pheidias, A.S.T.C.Arch., (Passed a qualifying examination approved by the R.A.I.A.), Kallithea Hotel, Platres, Cyprus. Prof. F. E. Towndrow, Prof. Denis Winston, Prof. H. Ingham Ashworth.

Laroya: Hans Raj, B.Sc. (Punjab, India) (Special Final Examination), Architect, C.P.W.D., 'L' Block, New Delhi, India. T. J. Manickam, Walter George, J. R. Bhalla.

Lokko: Guy Hazely Gifford, Dip.Arch.(Leics.), (Leicester Coll. of Art and Tech.: Sch. of Arch.), P.O. Box 136, Accra, Ghana. Robert J. Howrie, Tom A. Collins, S. Penn Smith.

Macfarlane: Ian Currie, D.A.(Glas.), (Glasgow Sch. of Arch.), Lugard House, Box 12666, Nairobi, Kenya. G. B. E. Norburn, G. C. W. Ogilvie, W. Alp.

Molligoda: Sepala Wimaladharma, Dip.Arch. (Sheffield), (Univ. of Sheffield, Dept. of Arch.), 61 Norris Canal Road, Colombo 10, Ceylon. Herbert E. Gonsal, N. Wynne-Jones, N. Gunaratna.

Perumal: Ardy Pillay, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), Architect, Federal Headquarters, Public Works Department, Maxwell Road, Kuala Lumpur, Malaya. Applying for nomination by the Council under Bye-law 3(*d*).

Reeves: John Fettes (Final), 24A Gibson Avenue, Toronto 5, Ontario, Canada. T. H. Thoms, W. S. Gauldie, A. F. S. Wright.

Ross: Alistair Menzies (Final), 204 Cantin Avenue, Eastview, Ottawa 2, Ontario, Canada. Ian B. Simpson, Coleman Hicks, E. M. K. Ellerton.

Sarang: Yeshwant (Final), c/o Patkar, 111A Dadar Main Road, Dadar, Bombay 14, India. A. S. Patil, G. S. Dadarkar, Homi N. Dallas.

Talavdekar: Ramesh Vasantrao (Final), 4C Raghar Wadi, French Bridge, Bombay 7, India. Prof. S. S. Reuben, S. J. Narwekar, A. S. Patil.

Members' Column

This column is reserved for notices of changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. Peter Dobbing, B.Arch.(L'pool) [*A*] has been appointed architect/planner with The Central Mortgage and Housing Corporation, Montreal Road, Ottawa, Ontario, Canada.

Mr. K. O. W. Hardy [*A*] has been appointed principal architect to the city of Durban (City Engineer's Department). His new address is c/o City Engineer's Department, P.O. Box 680, Durban, Natal, South Africa.

Mr. Claude S. Jarrett [*A*] has been appointed an associate of the firm of Messrs. Page and Steele, 72 St. Clair Avenue W., Toronto, Ontario, Canada.

Mr. Victor C. Launder [*A*] has been appointed Vice-Principal of The Royal West of England Academy School of Architecture, Bristol. His address is now 11 Orchard Road, Backwell, Somerset, where he will be pleased to receive trade catalogues.

Mr. Michael H. Morgan, Dipl.Arch., Dip.C.D. (L'pool), A.M.T.P.I. [*A*] has been appointed Town Planning Adviser to the government of Uganda. His address remains Box 1911, Kampala, Uganda.

Mr. Denzil Nield [*A*] has been appointed H.M. Inspector for the Ministry of Education in the Midlands Division. His address after March will be 13 Waterdale, Wolverhampton.

Mr. Alan Homes Rowe [*A*] has been appointed a Research Fellow in the University of Durham at King's College, Newcastle upon Tyne. He is undertaking a programme of work on the housing needs of old people, and would be particularly interested to hear of any manufacturers of building equipment who have studied this problem and have

produced items the design of which has been specially developed for use by aged persons.

Mr. Sami B. Shiber, M.C.D., B.Arch.(L'pool), A.M.T.P.I. [*A*] has taken up an appointment with The Central Mortgage and Housing Corporation, Ottawa, Ontario, Canada.

Mr. John B. Yates, D.A.(Dundee) [*A*], Deputy County Architect, Sutherland County Council, has been appointed County Architect in succession to Mr. James McGregor.

PRACTICES AND PARTNERSHIPS

Messrs. Alison and Hutchison and Partners (R. Forbes Hutchison [*F*], James Brown [*A*] and Stanley G. Owen [*A*]) have taken into partnership **Mr. Walter Scott** [*A*] and into associate partnership **Mr. George Bowie** [*A*], **Mr. H. H. Macdonald** [*A*] and **Mr. John M. McIntosh** [*A*]. The firm will continue to practise under the present style at 4 Rothesay Terrace, Edinburgh 3 (Caledonian 6537–8–9).

Messrs. Bartlett and Gray [*FF*] have taken **Mr. Ralph Hayes** [*A*] into associate partnership. Mr. Thomas Mather, A.R.I.C.S., has joined the firm as their quantity surveyor. The firm will continue to practise under the style of **Bartlett and Gray,** Castle Gate Chambers, Castle Gate, Nottingham (Nottingham 53214–5).

Mr. Kenneth C. Cheeseman [*A*] is now practising on his own account at 861B London Road, Westcliff-on-Sea, Essex (Leigh-on-Sea 74158) where he will be pleased to receive trade catalogues.

Mr. E. E. G. Cummins [*A*] has commenced practice at 'Greenways', Locks Hill, Portslade, Sussex, where he will be pleased to receive trade catalogues.

Mr. M. H. Dove [*A*] and **Mrs. D. C. Dove** (née Downer) [*A*] are now in practice at Blackheath, London, under the style of **Myles and Deirdre Dove.** Trade catalogues with price lists will be welcomed at 1 Montague House, Dartmouth Hill, London, S.E.10 (Tideway 1313).

Mr. Morris H. Ferguson [*A*] has terminated his partnership in the firm of **Messrs. Niall P. Heron and Partners,** Banbridge, County Down, N. Ireland, and has commenced practice under his own name at 82 Newry Street, Banbridge, County Down, where he will be pleased to receive trade catalogues.

Mr. Eric Lawson [*A*] has opened an office in the Montego Bay area of Jamaica under the direction of **Messrs. Ballard, Todd and Snibbe,** of 123 East 77th Street, New York 21, U.S.A. His address is P.O. Box 18, Hopewell, Jamaica, W.I.F. (Reading 289).

Mr. K. Scott [*A*] has entered into partnership with **Mr. E. Jordan-Walawski** under the style of **K. Scott and Partner** at 29 Oswald Road, Scunthorpe, Lincolnshire.

Mr. Douglas H. Smith [*A*] has commenced practice at 61 Regent Road, Leicester (Leicester 59481), where he will be pleased to receive trade catalogues.

Mr. H. R. Steele [*F*] practising as **Troup and Steele,** has taken into partnership **Mr. Ian M. C. Scott** [*A*]. The practice will be continued as previously under the same style at 14 Gray's Inn Square, London, W.C.1 (Holborn 3753–4) and branch offices have been opened at 118 Thames Side, Staines, Middlesex (Staines 52433) and at 39 Cleaver Square, Kennington, London, S.E.11 (Reliance 2365).

Mr. Laurance G. D. Thompson [*A*] and **Mrs. Eleanor G. Thompson** [*A*] are now practising on their own account under the style of **L. G. D. Thompson and E. G. Thompson** at 135 Main Street, Larne, Co. Antrim, N. Ireland (Larne 2493), where they will be pleased to receive trade catalogues.

Mr. Thomas F. Trower [*F*] has taken into partnership his son, **Mr. Roger J. Trower** [*A*]. The firm will practise under the style of **Thomas F. Trower and Son** at 74 Upper Close, Norwich (Norwich 25854).

Mr. Robert J. Wood [*A*] has taken **Mr. John Hanson** [*A*] and **Mr. C. A. Chapman** [*A*] into partnership under the style of **Robert J. Wood and Partners.** The practice will continue to be conducted from Lewes Road, Bromley, Kent (Ravensbourne 1083).

Messrs. Yorke, Rosenberg and Mardall [*FF*], of 2 Hyde Park Place, London, W.2 (Ambassador 4521) have taken into partnership **Mr. K. E. Box** [*A*], **Mr. B. Henderson** [*A*], **Mr. C. A. Kitchen, Mr. W. G. Lucas** [*A*], **Mr. J. S. S. Snell** [*A*], and **Mr. J. S. P. Vulliamy** [*A*].

CHANGES OF ADDRESS

Mr. Derek A. de-G. Abbott [*A*] has emigrated to New Zealand and his address for the time being is c/o F. H. Harris, Esq., Secretary, New Zealand Institute of Architects, P.O. Box 1990, Wellington, New Zealand.

Mr. L. Edward Billson [*L*] has moved his practice to 45 Full Street, Derby (Derby 47950) where he will be pleased to receive trade literature.

Mr. L. Cooke [*A*] has changed his address to Eastgate House, Cheyne Walk, Northampton. The telephone number remains Northampton 2751.

Messrs. David Dry and K. Halasz [*A*] have changed their address to 4 Farm Place, Campden Hill, London, W.8 (Park 5865).

Mr. N. T. Gilroy [*A*] has changed his address to 6 Bayview Avenue, Mill Valley, California, U.S.A.

Mr. Arthur Henderson [*A*] has changed his address to c/o Professor Gutbier, Eugenstrasse 16, Stuttgart, Germany.

Mr. Ivor Hodges [*L*] will change his address on 25 March to No. 10 Gray's Inn Square, London, W.C.1 (Holborn 1503).

Mr. C. B. Martindale [*F*] has moved his Buckinghamshire branch office to 23 Wilton Road, Beaconsfield, Bucks. The telephone number remains Beaconsfield 103.

Mr. P. G. Morley [*A*] has changed his address to Messrs. Booty, Edwards and Partners, P.O. Box 65, Brunei Town, Brunei, Borneo.

Messrs. Edward Narracott and Partner [*F/A*] of 48 Torwood Street, Torquay, have opened a branch office at 36 Looe Street, Plymouth, Devon (Plymouth 65680).

Messrs. Nichol and Edwards [*AA*] have changed their address to Parkway Chambers, Welwyn Garden City, Hertfordshire (Welwyn Garden 6699).

Mr. Bill Richards [*A*] has changed his address to 2nd Floor, 'A' Building, The Temple, Dale Street, Liverpool 2 (Central 4080/3981). He will be prepared to receive catalogues at this address but wishes to point out to manufacturers that information to international sizes has the best chance of being retained for reference.

Mr. R. W. G. Russell-Walker [*L*] has changed his address to 233 Sussex Gardens, London, W.2, where he will be pleased to receive trade catalogues.

Mr. Vyvyan Salisbury [*F*] has opened a branch office at Coombe House, Coombe Street, Exeter, where he will be pleased to receive trade journals.

Messrs. Gerald Shenstone and Partners [*F/L*], of 34 Bloomsbury Way, London, W.C.1, have opened a branch office at 28 Mulgrave Road, Sutton, Surrey.

Mr. R. L. Staniland [*A*] has changed his address to 113 Mossley Avenue, Wallisdown Road, Poole, Dorset.

Mr. John Storie [*A*] has changed his address to Bellanaleck, Enniskillen, Co. Fermanagh, Northern Ireland.

Mr. T. N. Wall [*A*] has changed his address to 162 Broadfields Avenue, Edgware, Middlesex (Stonegrove 9791).

Mr. D. J. Wortley [*A*] has changed his address to 26 Harley Road, Ecclesall, Sheffield 11, Yorkshire (Sheffield 70700).

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow (early fifties), owing to death of partner, wishes to contact other younger architect or architects with own practice to discuss partnership in West End of London. Has considerable experience of domestic, hospital and laboratory work. Small amount of capital available. Box 104, c/o Secretary, R.I.B.A.

Old-established and progressive firm of West Riding architects wish to contact similar firm in the Midlands with a view to amalgamation, basically to expand the scope of both practices, or would consider buying practice where existing partner is contemplating retirement. All communications will be kept strictly in confidence. Box 105, c/o Secretary, R.I.B.A.

Associate with small but old-established practice in Manchester wishes to contact another with a view to amalgamation, or to be branch office of large practice. All replies treated in strict confidence. Box 114, c/o Secretary, R.I.B.A.

Associate (37), 12 years' varied experience London, seeks partnership or position leading thereto in London or Home Counties. Resident Berkshire. Some capital available. Box 115, c/o Secretary, R.I.B.A.

For sale, established architect's practice, busy town in north-east Kent. Sale owing to death of principal. Good offices in main road position at low rent. Well equipped. Audited accounts available. Price £1,000 for quick sale. Good prospects for energetic person. Box 117, c/o Secretary, R.I.B.A.

Partnership offered in north-west town. No capital required, but must be car owner. Probationary period. Write giving full details of experience. Box 118, c/o Secretary, R.I.B.A.

MISCELLANEOUS

Wanted, few very superior student volunteers for an excavation of a monastic site on a tiny uninhabited Welsh island in August. Must be willing to forgo civilised habits, prepared to camp, assist in re-roofing ruined building and consolidating masonry. Must also be physically strong, hard-working, congenial and decent. Archaeological experience an advantage. Good food, etc. provided. (Should be prepared to encounter the occasional bomb.) Applications should be addressed to Mr. Douglas B. Hague [*A*], Royal Commission on Ancient Monuments in Wales and Monmouthshire, 17 Queen's Road, Aberystwyth, Cardiganshire.

Member requires all or some of following issues of ARCHITECTURAL REVIEW: Jan., Feb. 1950, July–Dec. 1954, Jan.–Dec. 1955, Jan.–Dec. 1957; and has the following for disposal: bound volumes 95, 96, 97, 98 of ARCHITECTURAL REVIEW and bound volumes of ARCHITECTURAL DESIGN for 1953, 1954, 1955 and July 1957–June 1958. Box 116, c/o Secretary, R.I.B.A.

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1850

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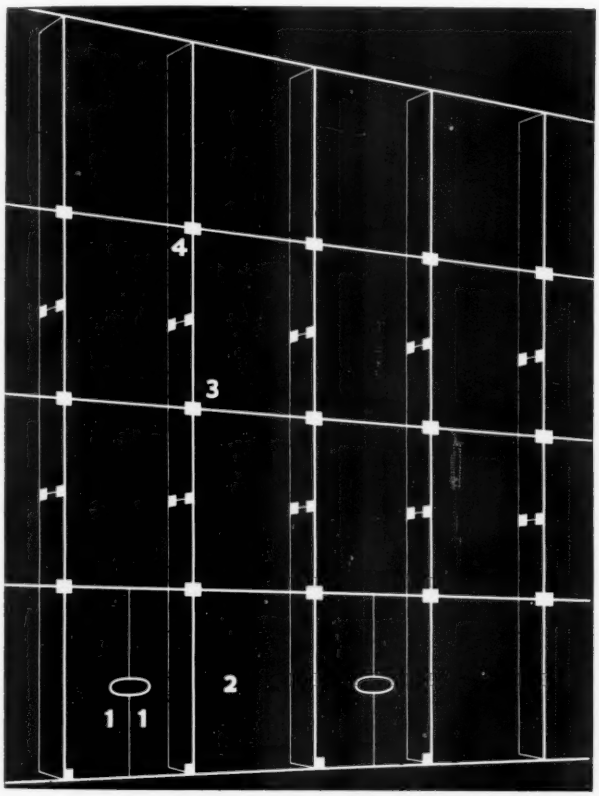

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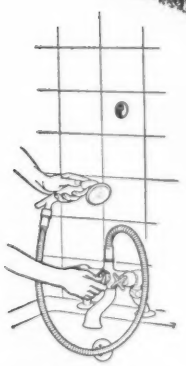

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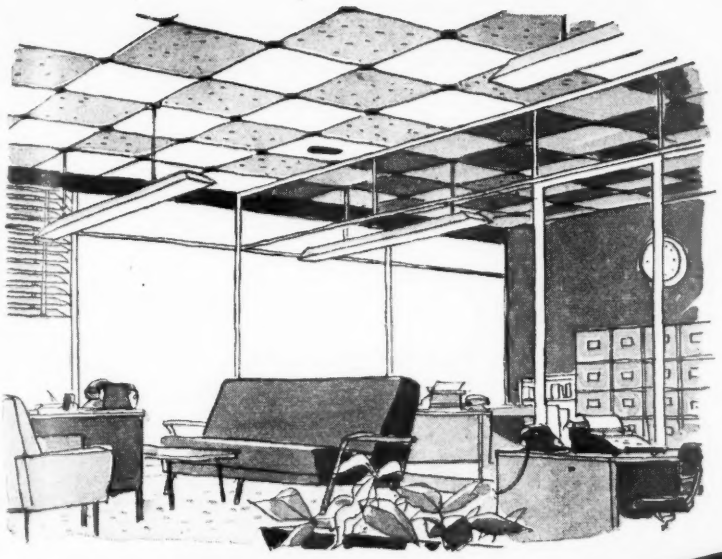

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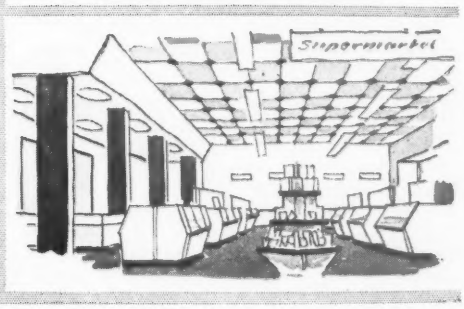

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Architects: Farmer & Dark

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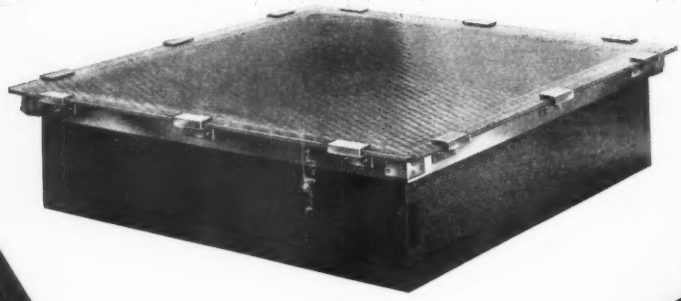

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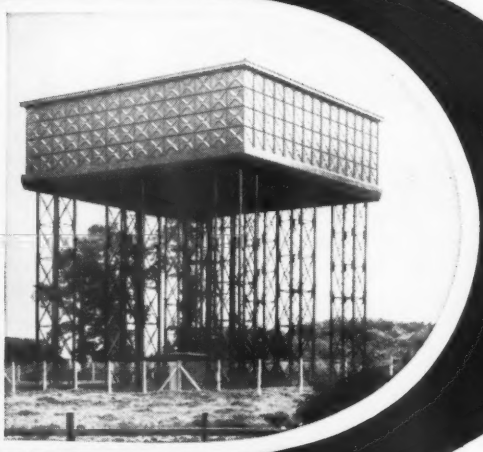

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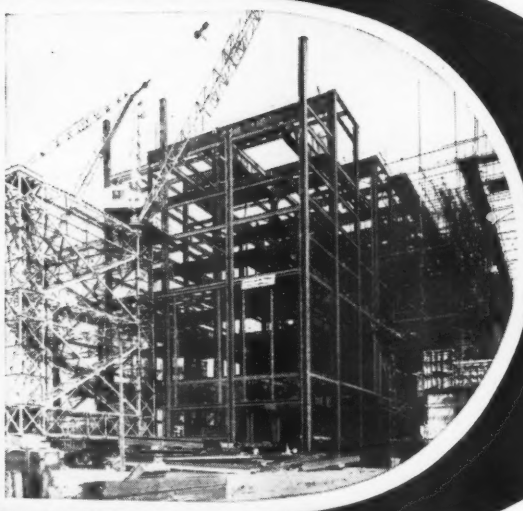

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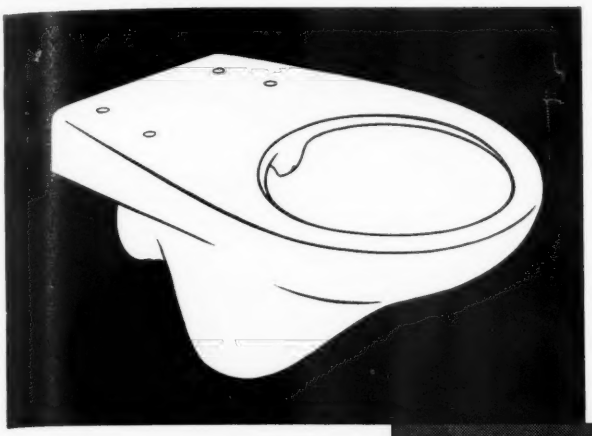
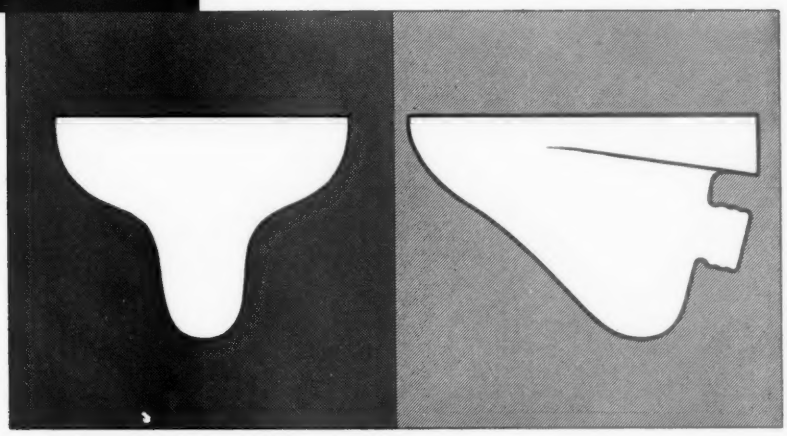


design



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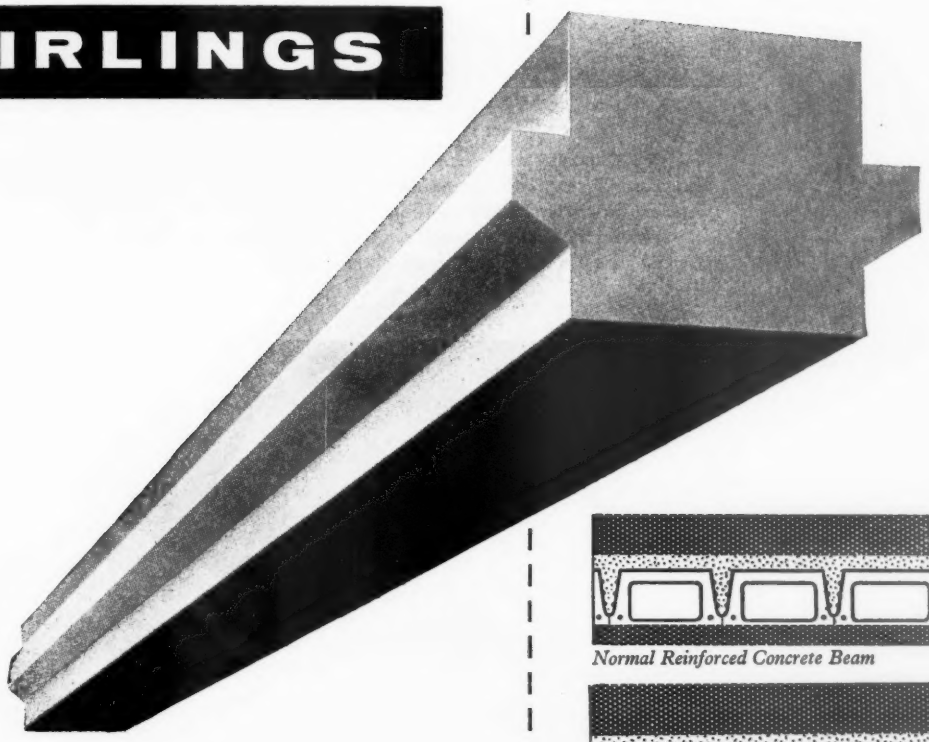
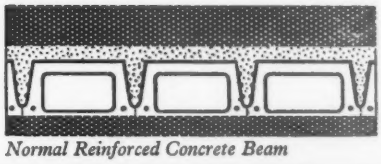
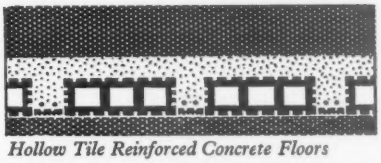
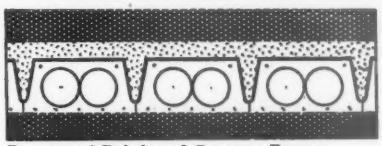




Normal Reinforced Concrete Beam



Hollow Tile Reinforced Concrete Floors



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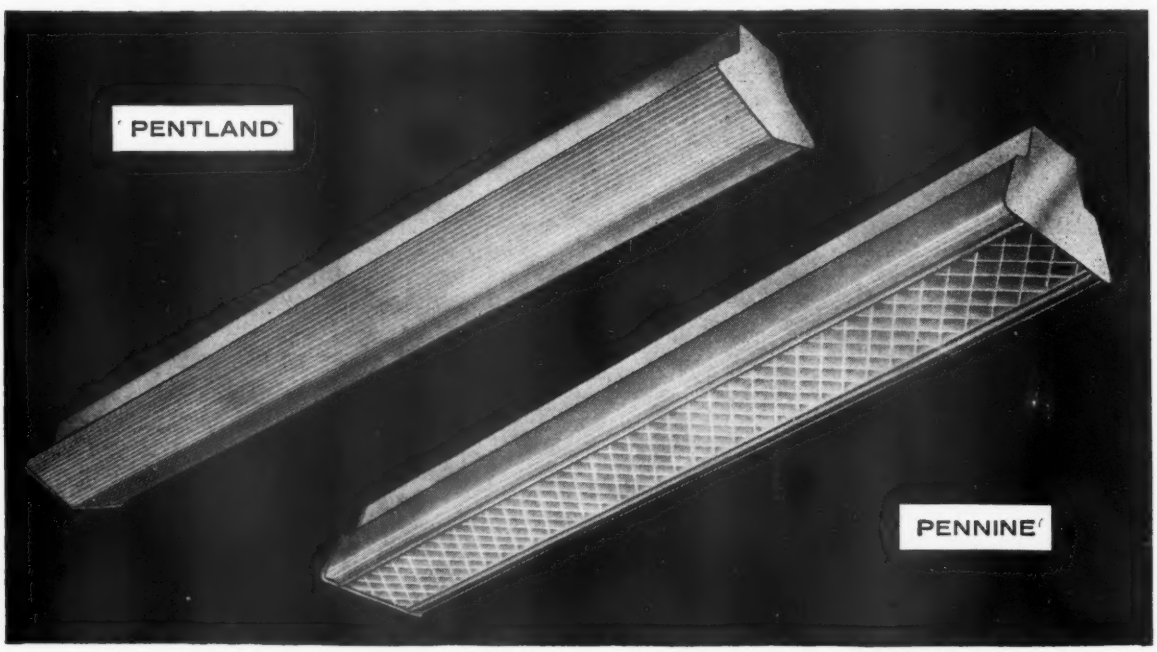

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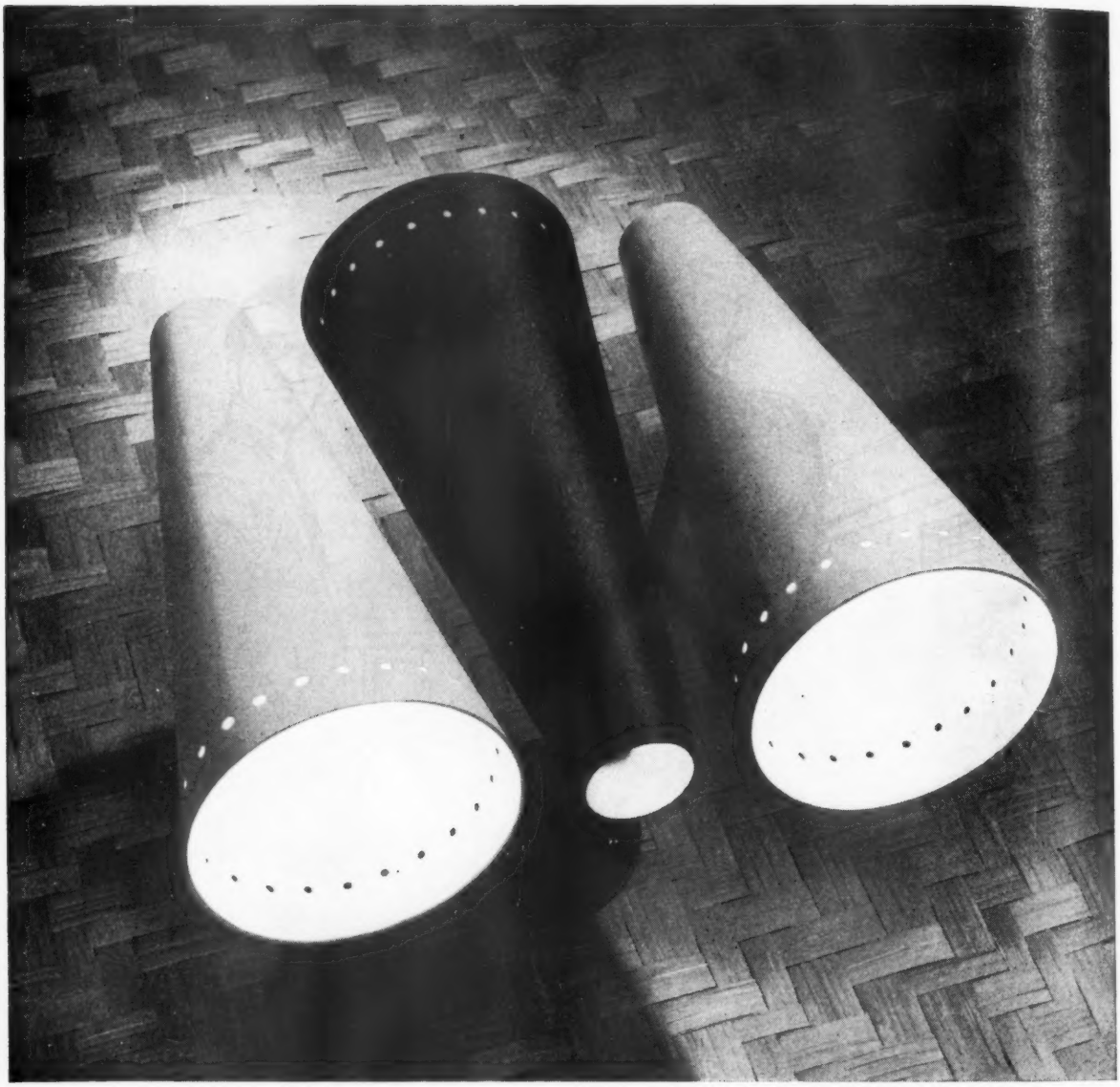

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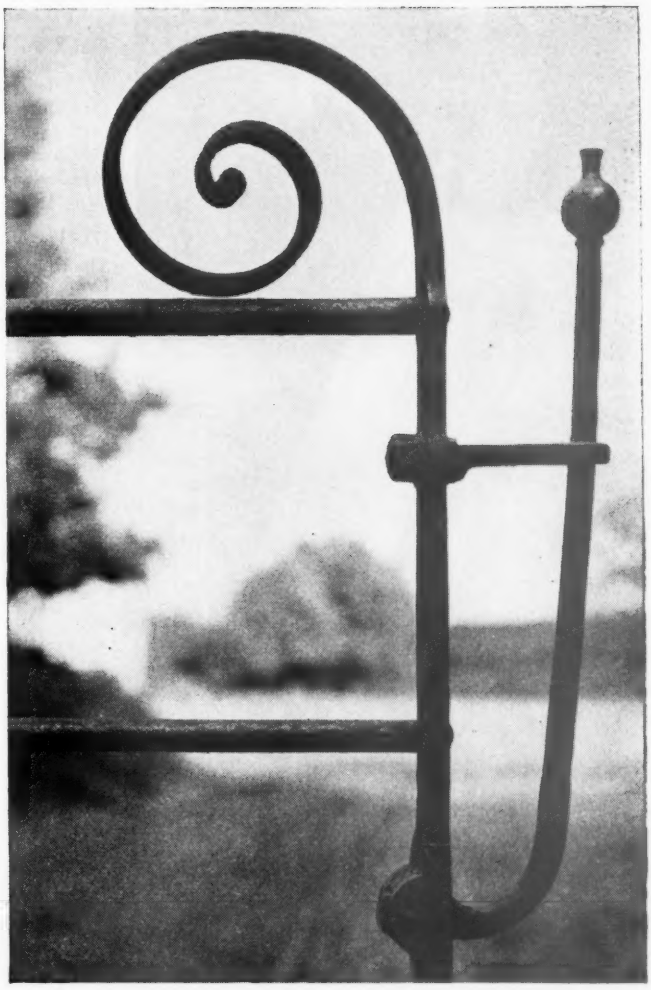
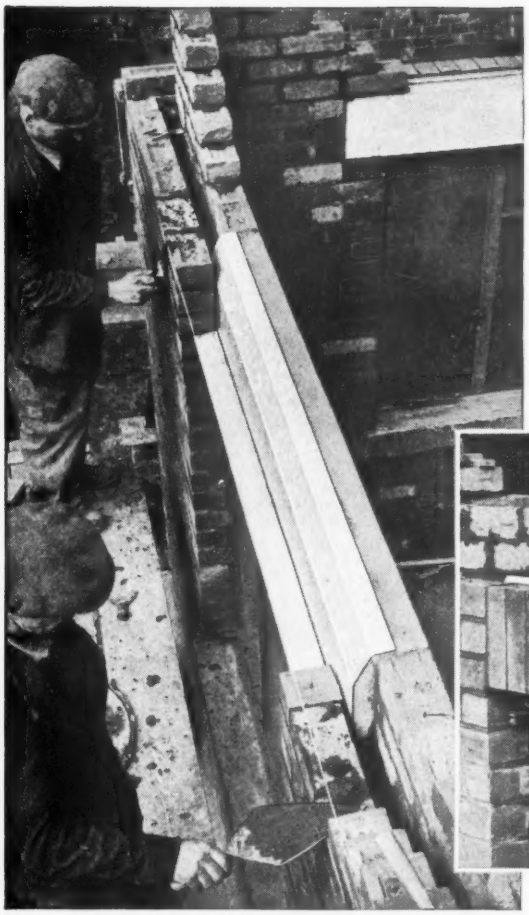


After years of patient practice,
a student of Zen archery became as one with his bow & arrow
and at last achieved a perfect shot.
The Master bowed with slow grace and the student smiled smugly.
'I did not bow to you,' said the Master,
a stern disciplinarian, 'I bowed to the It of perfection'.
So one feels inclined to bow to any achievement which
reached perfection in its own sphere, however humble —
even to this latch of iron made by some forgotten craftsman
in rural Devon who happened to love his job.
Carters strive for this mystic It of perfection
when they make a humble tile.

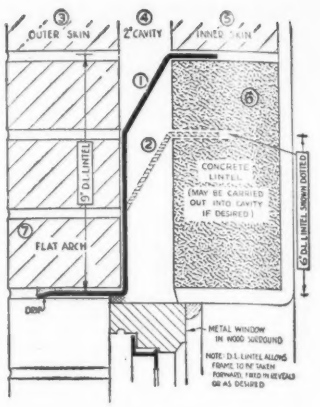


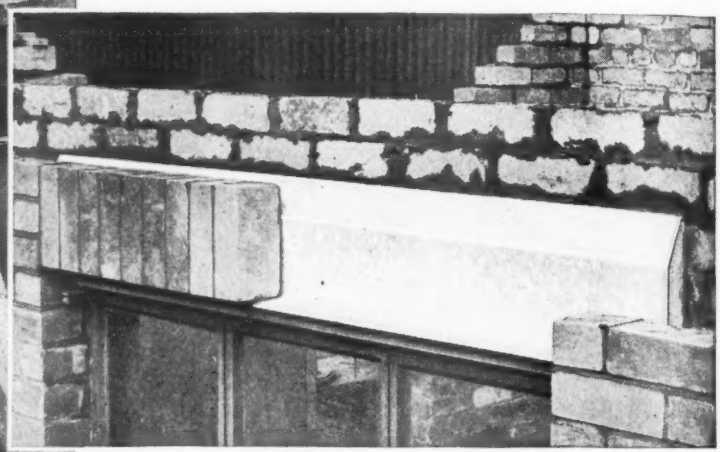
SECTION SHOWING TYPICAL DETAIL

(1) 9 in. Dorman Long Lintel
(2) 6 in. Dorman Long Lintel (shown dotted)
(3) Outer skin
(4) Cavity
(5) Inner skin
(6) Inside concrete lintel (carried out into cavity if so desired)
(7) Flat arch

The wide 'turn-in' of the Dorman Long Lintel allows the cavity to be varied from 2 in. to 2¾ in. in width.

Patent No. 694214





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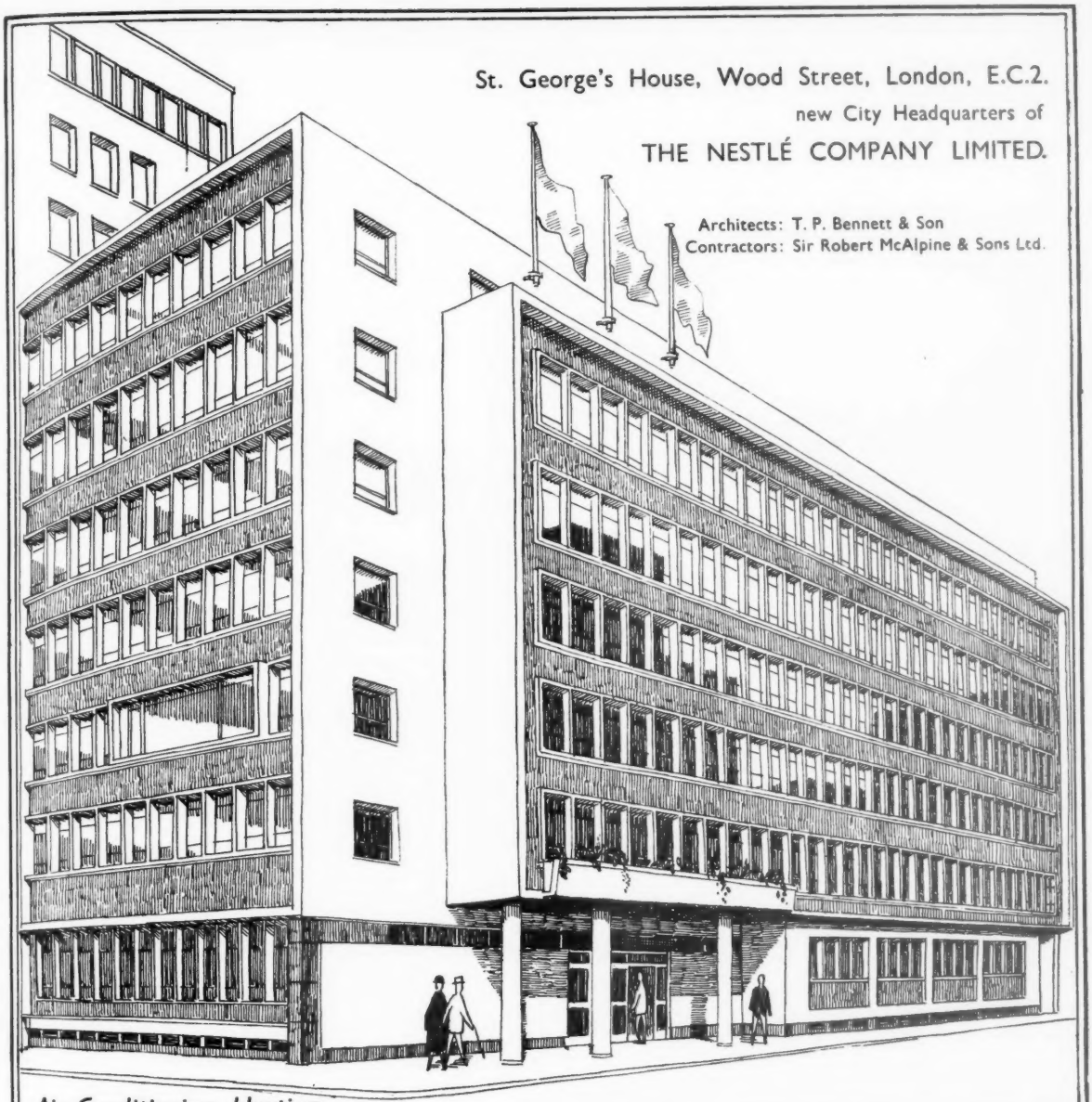

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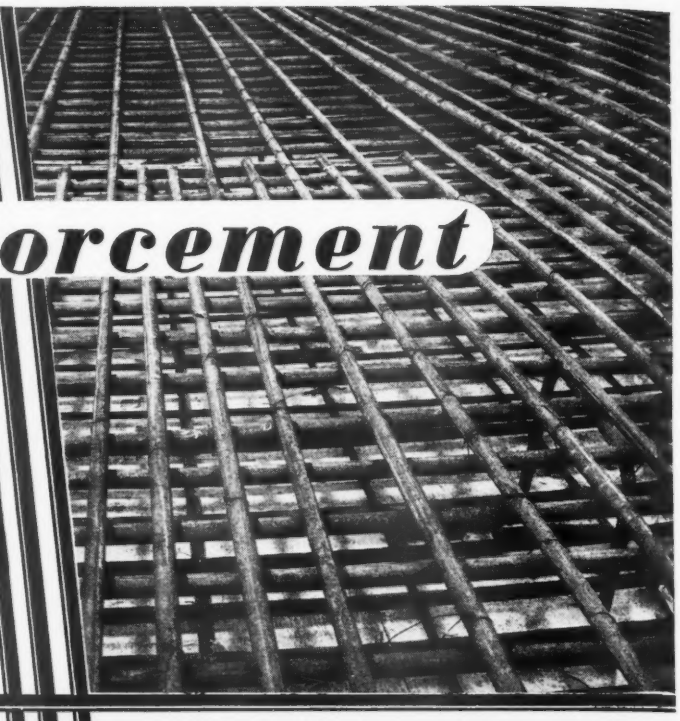

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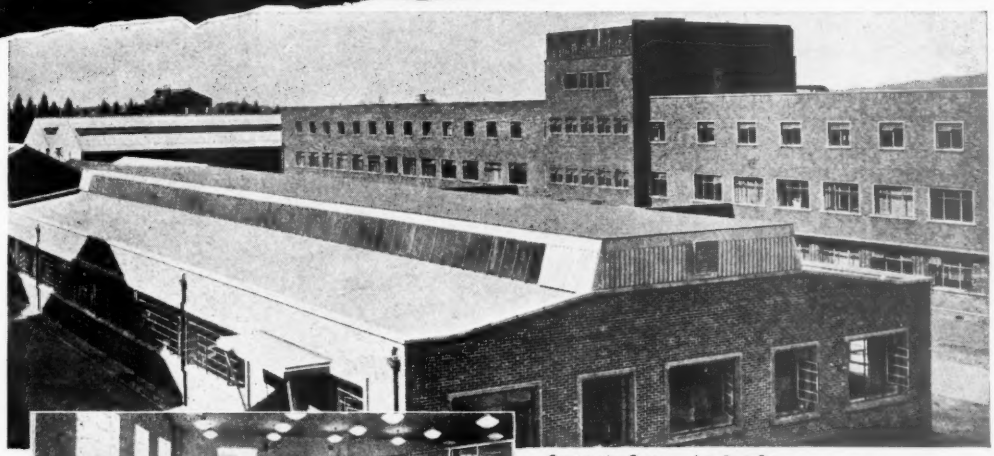

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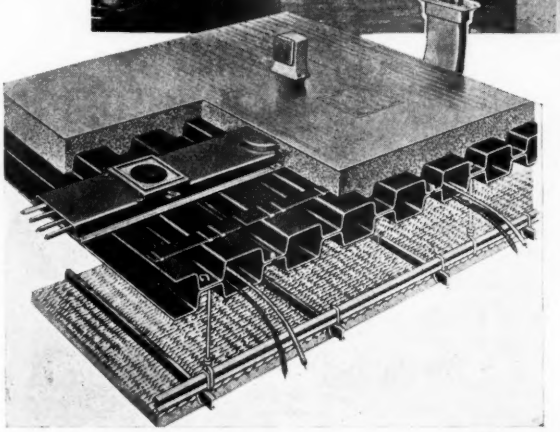
Main Contractor: Messrs. Thornhill Bros. Ltd., Lincoln.
Steelwork Contractor: Messrs. Joseph Parks & Son Limited.



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PHORPRES

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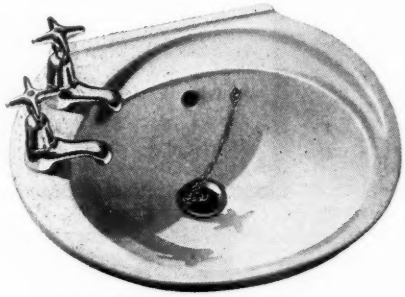

A fully illustrated booklet, published in the interest of more and better hygiene and sanitation is available on request.

Inherent in Ceramic **Glazed Fireclay** are qualities that cannot be equalled by other and seemingly cheaper substitutes. Reduced to their simplest dimensions they are its qualities of sturdiness, solidity, durability and its hygienic high-lustre glaze. Consider the average housewife and the demands she makes upon a normal kitchen sink. Watch her use it when preparing vegetables for cooking. See her wash or rinse clothes in it. She'll fill it with boiling water and the very next minute deluge it with cold. She'll empty detergents into it, and generally subject it to the most stringent endurance tests that any sanitary ware can be called upon to withstand. But one material will really stand up to such a test year in and year out, and that material is Ceramic **Glazed Fireclay.** Just one illustration that serves to emphasise some of the reasons for specifying **Fireclay,** not only for domestic use, but in industry, schools, hospitals, hotels, restaurants, public conveniences, theatres, transport terminals, in fact for any project calling for sanitary ware reflecting the highest standards.

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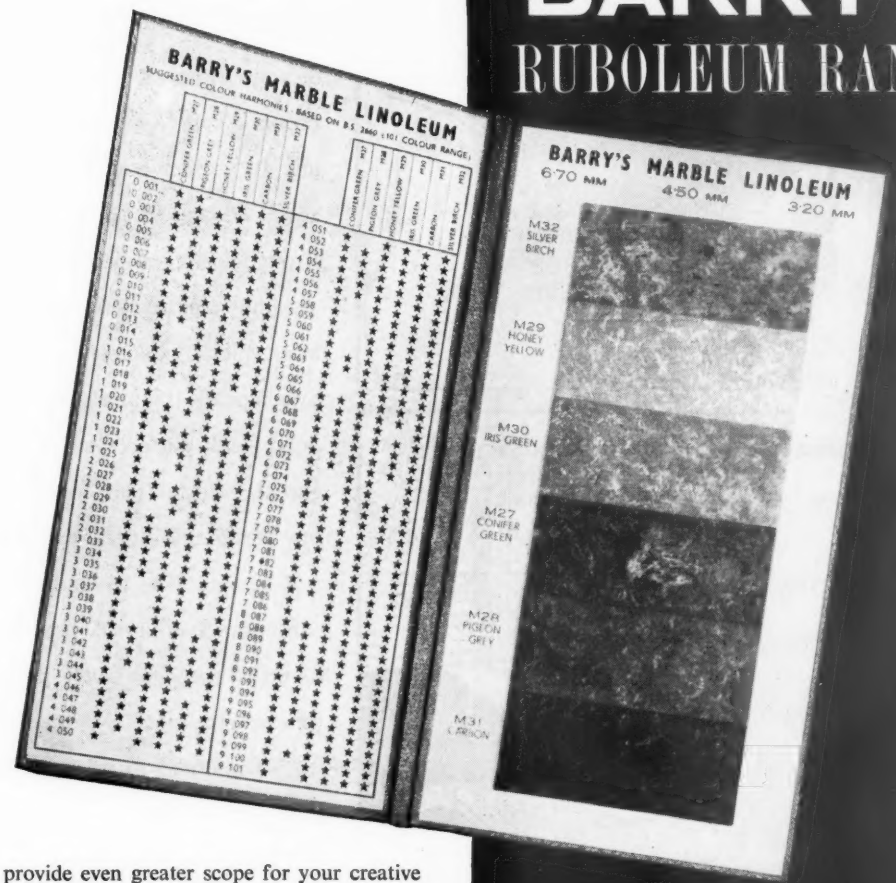

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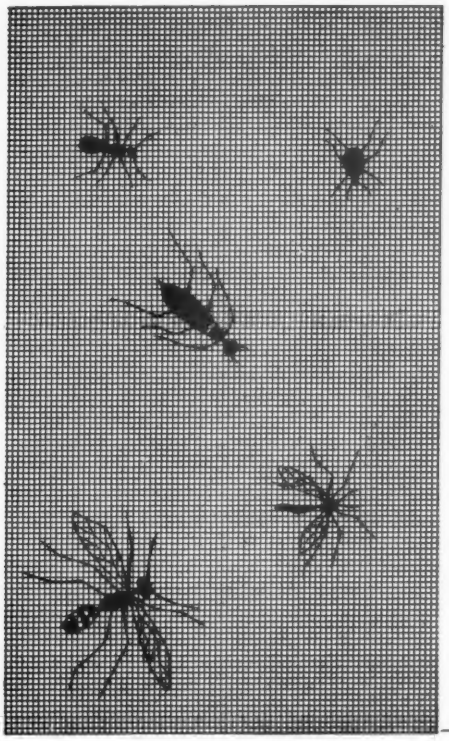

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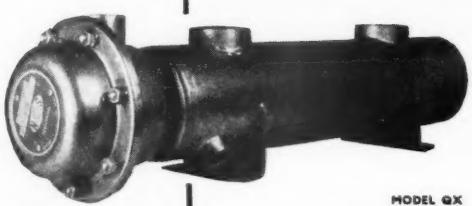

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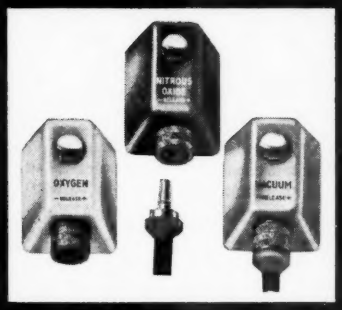

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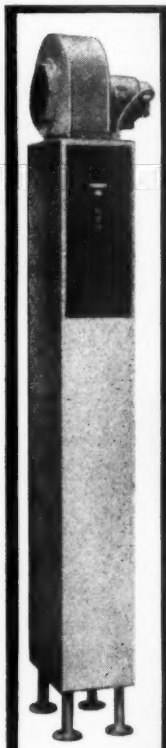

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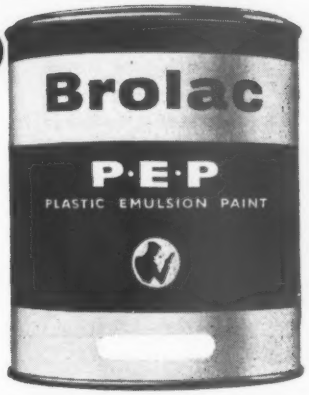

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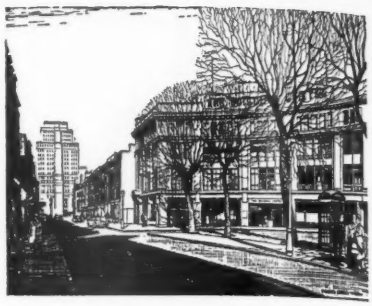

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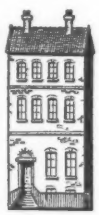

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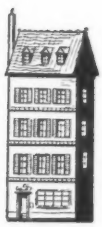

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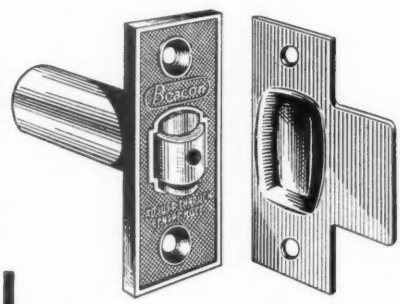

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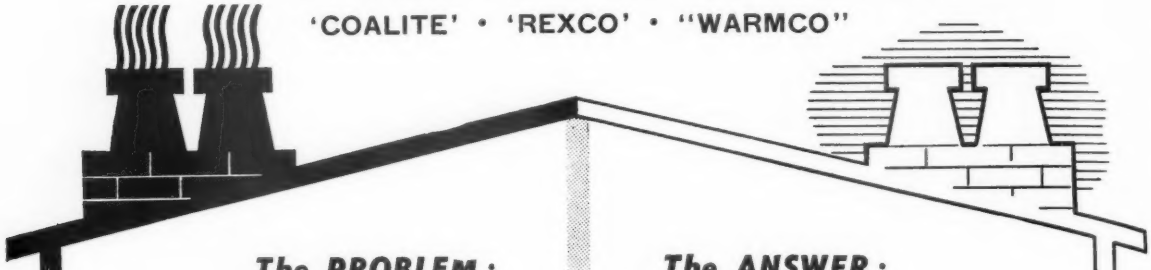

The PROBLEM:

More than half the smoke polluting the atmosphere comes from domestic appliances. Many of these appliances are inefficient and wasteful: smoke and inefficiency usually go together. In the past it has been common for building owners to install inefficient appliances simply because they were cheap. The fuel they waste, and the damage from smoke, far outweigh any initial cheapness.

The ANSWER:

All modern houses should have approved fires that can burn solid smokeless fuels. A complete range of high-efficiency solid smokeless fuel appliances is available to provide all the heat services in the home. MODERN approved appliances burning Solid Smokeless Fuels provide these heat services more cheaply and with greater efficiency than any comparable old-type appliance in common use.

SMOKE CONTROL AREAS and solid smokeless fuels:

These are the solid fuels authorised under the Act to be used in Smoke Control Areas, in which the emission of smoke from chimneys can be a punishable offence. Domestic solid fuel appliances in which the authorised solid smokeless fuels cannot be burned satisfactorily must be modified to do so or be replaced.

The list of "Approved Domestic Solid Fuel Appliances" is published jointly by the Solid Smokeless Fuels Federation and the Coal Utilisation Council. The list can be obtained from the Solid Smokeless Fuels Federation, who provide also free advisory service.

SOLID SMOKELESS FUELS FEDERATION SSFF **74 Grosvenor Street, London, W.1** *MAYfair 3327*

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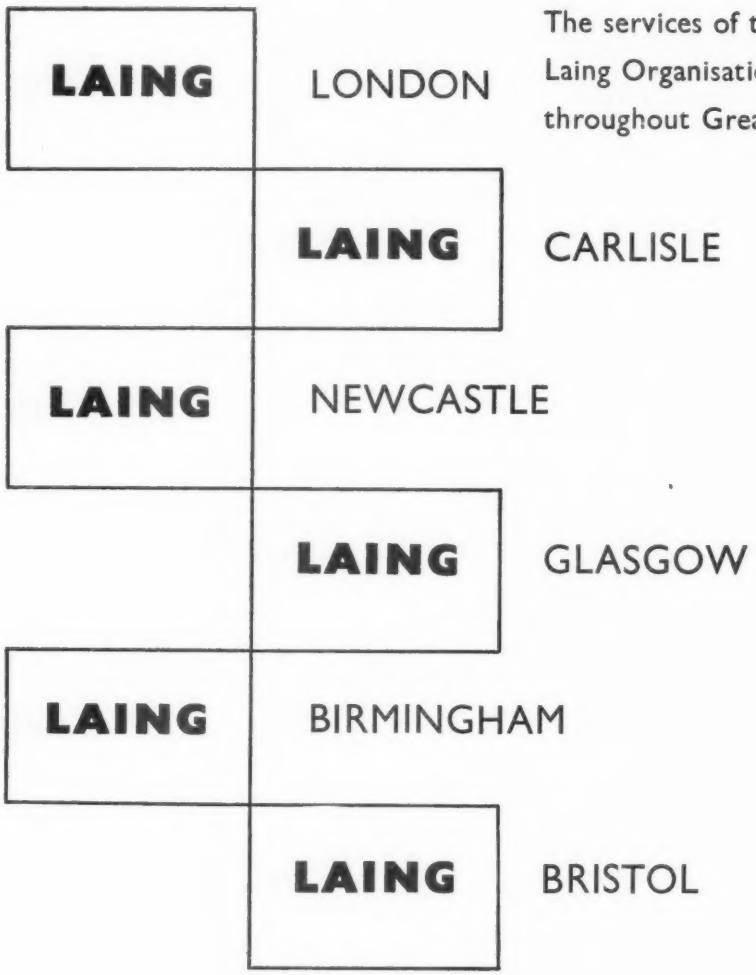

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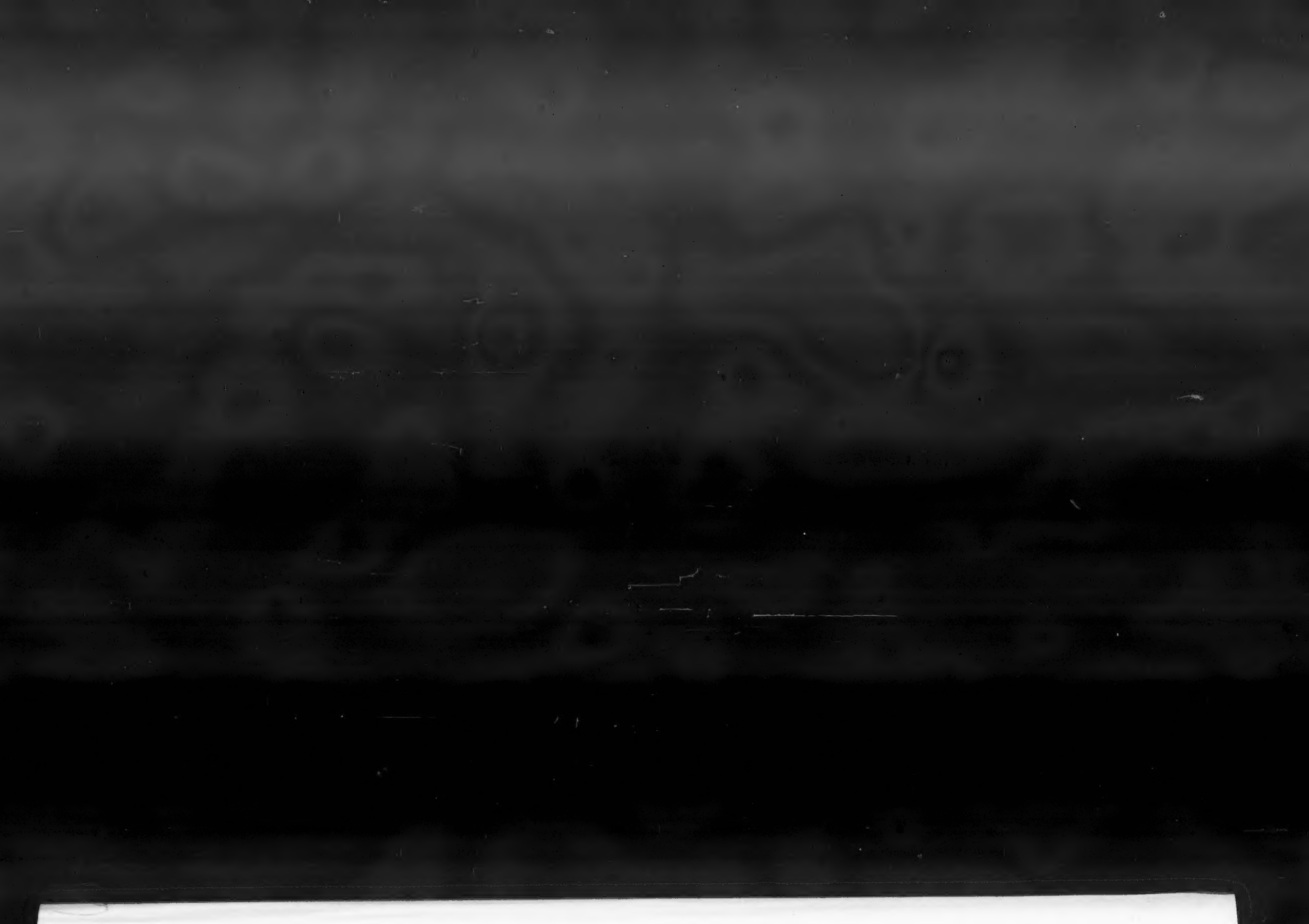
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